

# REDCap Flex Upgrade Changelog – September 2023

## Upgrade (v. 13.1.37 → v. 13.7.14)

### Bug Fixes, Security Fixes, Changes, and Minor Improvements

#### Version 13.7.14

##### CHANGES IN THIS VERSION:

- **Medium security fix:** The Chart.js JavaScript library that is included in REDCap contains a bundled version of the Moment.js library, which contains a security vulnerability in that specific version. The bundled Moment.js library has been removed. It does not need to be replaced since REDCap already has the latest version of Moment.js included separately already.
- Bug fix: When using Azure AD V1 for authentication, the setting "AD attribute to use for REDCap username" on the Security & Authentication page mistakenly listed the employee ID attribute as "employeeID" when it should instead be "employeeid". This could prevent proper authentication if that option was selected. (Ticket #213619)
- Bug fix: When using the Survey Login feature and a survey participant begins a new survey while their survey login session is still active, the survey instructions would mistakenly not be displayed on the page by default. (Ticket #212987)
- Bug fix: When exporting a project as a Project XML file and then creating a new project from the XML file, if the Survey Login feature had been utilized and the Survey Settings checkbox had been checked when exporting the XML file, the Survey Login settings would mistakenly not get transferred into the newly created project. (Ticket #212987)
- Bug fix: When using the Custom Record Label on a multi-arm longitudinal project, if an "ad hoc" calendar event is created and is attached to a specific record, the Custom Record Label might mistakenly not be displayed when viewing the calendar event in the calendar popup window. (Ticket #23367b)
- Bug fix: When adding a new instrument in a MyCap-enabled project, the Online Designer page might mistakenly crash with a fatal PHP error when using PHP 8. (Ticket #213817)
- Bug fix: When enabling Mosio SMS Services on a project, it would mistakenly allow users to enter a Mosio API Key that is already being used by another REDCap project. This should not be allowed. It will now prevent a user from entering a Mosio API Key if that key is already being used by another project. Additionally, if two projects already are using the same Mosio API Key before upgrading to this REDCap version, the Mosio configuration popup will auto-disable the SMS Conversation option to prevent both projects from using the same Mosio API Key, which could cause issues specifically when using the "Initiate survey as SMS conversation" option. (Ticket #213376)

- Bug fix: An error was thrown during the deserialization of CDIS messages. The issue was caused by the DateTime class not being included in the list of allowed classes for deserialization.
- Bug fix: When using Multi-Language Management, branching logic based on a field set by the action tags LANGUAGE-CURRENT-FORM/-SURVEY would mistakenly not work when the field is a text box field.
- Bug fix: REDCap's internal function for copying files would mistakenly fail to copy files when using Google Cloud Storage as the file storage system. (Ticket #213946)

## Version 13.7.13

### CHANGES IN THIS VERSION:

- **Minor security fix:** A DOM-based Cross-site Scripting (XSS) vulnerability was discovered on all project-level pages that could possibly be exploited if a malicious user is able to manipulate the JavaScript "location" interface/variable in specific ways.
- Bug fix: When pulling data from an EHR system via CDIS, date filters were not being correctly applied when fetching temporal data. (Ticket #212894)
- Bug fix: FHIR stats were mistakenly counted in DDP (Dynamic Data Pull) projects when using CDP (Clinical Data Pull) auto-adjudication.
- Bug fix: When using Table-based authentication and a user has somehow been granted access to a project and added to a user role (e.g., via user role CSV upload) despite the fact that the username does not exist as a real user account in the system, it would be impossible to remove the user from their role, to re-assign them to another role, or ultimately to remove them from the project. (Ticket #207764)
- Bug fix: When viewing the Online Designer in a MyCap-enabled project, the "Enable" button for enabling MyCap for a given a data collection instrument would mistakenly be disabled, thus preventing users from enabling the instrument as a MyCap task, if the instrument's first field was part of a matrix of fields. (Ticket #213075)
- Bug fix: When viewing the Stats & Charts page for a given report and clicking the "Missing" link to view a list of missing values, it might mistakenly display many false positives of repeating instances that do not really exist in the data. (Ticket #211913)
- Bug fix: When clicking the "Enable color-blind accessibility" displayed below a pie or donut Smart Chart on a data entry form or survey page, it would send the user/participant to a non-existent page, thus resulting in a 404 error. (Ticket #211920)
- Bug fix: When using "Azure AD OAuth2 & Table-based" authentication together with Duo two-factor authentication (2FA), after a user successfully logs in via Table-based authentication, they would mistakenly not be redirected to the Duo OAuth2 page for two-factor authentication. (Ticket #211697)
- Bug fix: When using Multi-Language Management, the text "(Place a mark on the scale above)" that is displayed below Slider fields was mistakenly not translatable via MLM. It has now been added.

## Version 13.7.12

### CHANGES IN THIS VERSION:

- **Major bug fix:** If a repeating Automated Survey Invitation has been enabled in a project in which one or more records have triggered the ASI initially, if the ASI was then disabled for a certain amount of time and then re-enabled later, after which a user or participant triggered an ASI in *any* project in which the ASI is set to send immediately, it would mistakenly cause the repeating ASI in the original project to send/schedule hundreds or thousands of invitations for each record that was originally triggered in that original project. This issue was caused by the invitation-sending function being called recursively when an individual record triggers an ASI. (Ticket #210378)
- Bug fix: In certain instances, the "Download PDF of instrument(s) via browser's Save as PDF" feature may mistakenly not show all the text for Notes Box fields in the resulting PDF if the Notes Box fields contain a lot of text. (Ticket #211228)
- Bug fix: The feature to compare data dictionaries/revisions on the Project Revision History page might produce unexpected results in which the comparison does not display the correct results. (Ticket #208391)
- Bug fix: Descriptive Text fields would mistakenly not be returned when a user searches for fields via the Field Finder on the Codebook page. (Ticket #212763)
- Bug fix: After modifying the schedule of an existing record on the Scheduling page, the logged events of schedule modifications would correctly appear on the Logging page by default, but some of the schedule-related logged events would not appear on the Logging page when using the "Filter by record" option for that specific record. Note: This will be fixed for all schedule modifications going forward, but all existing logged events for schedule modifications cannot be fixed retroactively. (Ticket #208481)
- Bug fix: When calling the API Export Records method to retrieve data in "odm" format from a project that contains data for repeating events, if the "fields" parameter is provided in the API call and does not contain any field utilized on a repeating event, the resulting XML might mistakenly be malformed and not structured correctly. (Ticket #208787)
- Bug fix: Administrators that have "Perform REDCap Upgrades" privileges would receive an error message when attempting to use the Easy Upgrade feature if they did not also have some other admin privileges. This has been fixed so that only "Perform REDCap Upgrades" privileges are needed to perform an upgrade. (Ticket #211957)
- Bug fix: When using the @DOWNLOAD-COUNT action tag in which the field being referenced by the action tag exists on the same page, if users or participants download the file using their browser's right-click "Save as" option (as opposed to directly clicking it), it would mistakenly not register as a download to be incremented for the count field on the page. Although the server-side call to download the file via "Save as" would increment the counter field's value on the back-end, the front-end value would now be out of sync. There's no way to change the counter on the page from being temporarily out of sync, but REDCap will now auto-fix the value after

the form/survey is submitted in order to reconcile the true count value and save it to the counter field. In summary, this fix should ensure that the counter field's value is correct whether or not someone downloads the file with a normal click or via the right-click "Save as" option.

- Bug fix: When modifying any of the drop-down fields in the Survey Design Options section of the Survey Settings page for a given instrument, it would cause the Cancel button at the top or bottom of the page to no longer work unless clicked many times. (Ticket #211204)
- Bug fix: Several files located in the /redcap/webtools2/pdf/ subdirectories are no longer compatible with PHP 8.2.0 and higher. In addition to fixing the compatibility issues with PHP 8.2, all the files in /redcap/webtools2/pdf/ have now been incorporated directly into the REDCap version directory so that they can be kept up to date on an ongoing basis with future versions of PHP. (Ticket #211377)
- Bug fix: If the File Storage method for REDCap is set to "Google Cloud Storage using API Service Account", downloading the Instrument Zip file of an instrument that is enabled as a survey and contains a survey logo would mistakenly fail due to a fatal PHP error. (Ticket #212967)
- Bug fix: When entering a non-URL value (e.g., field variables, Smart Variables) into the "Embed an external video" text box while editing a Descriptive Text field in the Online Designer, it would mistakenly prepend "http://" to the beginning of the value entered.
- Bug fix: Public reports and public project dashboards might not display optimally when viewed on mobile devices, such as images appearing too large or the report table going outside of its parent box.

## Version 13.7.11

### CHANGES IN THIS VERSION:

- Bug fix: When using the Designate Instruments page in a longitudinal project while running PHP 8, editing the event grid may result in an error message, preventing the edits from being saved. This issue was supposedly fixed in a previous issue but mistakenly was not. (Ticket #212677)

## Version 13.7.10

### CHANGES IN THIS VERSION:

- Bug fix: When using the EHR launch window for Clinical Data Pull, the REDCap page embedded in the EHR might mistakenly not display any CDP projects for the user for the relevant patient. (Ticket #211654)
- Bug fix: In certain places throughout REDCap, the rich text editor might mistakenly display the "Insert/edit media" button on the editor toolbar. This was added unintentionally, and in most (if not all) cases, attempting to add media using that button would not be successful. That media button has now been removed from the editor. (Ticket #211132)

- Bug fix: When using the Designate Instruments page in a longitudinal project while running PHP 8, editing the event grid may result in an error message, preventing the edits from being saved. (Ticket #211983)
- Bug fix: When using Multi-Language Management, the MLM page in the Control Center might mistakenly not export the MLM usage stats in a way that the file can be opened successfully in Excel. (Ticket #211875)
- Bug fix: For certain server configurations, Send-It might cause some files to be corrupted when downloaded by the recipient. (Ticket #212072, #208036)
- Bug fix: When a user is running Data Quality rule A or B, it might mistakenly return checkbox fields as discrepancies. As noted by the single asterisk at the bottom of the Data Quality page, rules A and B note that "checkbox fields are also excluded since an unchecked checkbox is itself often considered to be a real value." (Ticket #212048)
- Bug fix: When performing an API Metadata Import, a data dictionary snapshot would mistakenly be taken after the new metadata was saved via the API call when instead the snapshot should be taken immediately beforehand during this metadata import process.
- Bug fix: When performing a data import on the Data Import Tool page when using PHP 8, a fatal PHP error might mistakenly occur. (Ticket #212225)
- Bug fix: In certain edge cases that involve the Records::getRecordList() method being called by a REDCap plugin, a fatal PHP error might occur when using PHP 8 if the "pid" parameter does not exist in the current URL but has been set as \$\_GET['pid'] manually by the plugin itself. (Ticket #212232)
- Bug fix: If a checkbox field contains a choice coding that contains a period, in which there exists another choice coding with the same value if the period is excluded (e.g., "2" vs "2."), those two choices would get mistakenly conflated as the same import/export version of the checkbox variable name, which could cause issues with data exports and reports not displaying correctly. From now on, any periods existing in a checkbox coding will be converted to an underscore in the resulting import/export variable name, whereas in previous versions the period was removed completely from the variable name. (Ticket #211904)
- Bug fix: When importing a missing data code for a field that has a min/max validation range, the data import process would mistakenly return an error saying that the missing data code value was out of range. Instead, it should allow the missing data code value to be imported. (Ticket #211903)
- Bug fix: Using the function isblankormissingcode() in a calculation for non-numeric missing data codes might mistakenly cause the server-side rendering of the calculation (e.g. Data Quality rule H) to return an incorrect value. (Ticket #212145, #212178)
- Bug fix: If a field has the @CALCTEXT action tag and also has date/datetime validation, server-side processing of the calculation (e.g., Data Quality rule H) might mistakenly fail to save a new/correct value for the @CALCTEXT field. (Ticket #211780)

- Bug fix: When exporting a PDF of an instrument containing data via the API, the Logging page would mistakenly display the project ID in place of the record name in the Action column of the Logging table for this logged event. This will be fixed so that it will resolve this issue for both past logged events and future logged events. (Ticket #212245)
- Bug fix: Some folders in the File Repository might mistakenly not display due to a DataTables error caused by the JSON-encoding of mangled UTF-8 characters in the descriptions and attributes of the files being displayed in the file list. (Ticket #208637)
- Bug fix: If a Notes field is embedded inside a checkbox field's choice label on a survey that has "enhanced radio buttons and checkboxes" enabled, the checkbox choice would mistakenly get unchecked whenever the participant clicked or focused their cursor on the Notes field. Note: This does not affect embedded Text fields but only Notes fields. (Ticket #210763)
- Bug fix: If the query of a Dynamic SQL field begins with "select" followed immediately by a line break or carriage return (as opposed to a space), the Dynamic SQL field would not return any results and would not display any drop-down options. (Ticket #212474)
- Bug fix: If using an HTML "style" tag inside user-defined text (e.g., field label, survey instructions), the CSS styles inside the tags might mistakenly not work on the page if line breaks or carriage returns occur anywhere inside the opening and closing style tag. (Ticket #211394)
- Bug fix: When using an [aggregate-X] smart variable in a calculation or CALCTEXT field, depending on the context the calculated value might not always get saved successfully, and additionally the Logic Editor might note the calculation to have errors when it in fact does not. (Ticket #211063)

## Version 13.7.9

### CHANGES IN THIS VERSION:

- Bug fix: If a user has created a File Repository folder that is Data Access Group restricted or User Role restricted, and then a user deletes the DAG or User Role to which the folder is restricted, the folder would mistakenly be deleted, after which all of the files in the folder would be automatically moved into the main top-level folder in the File Repository. This has now been changed so that if a folder is restricted to a User Role, the folder will no longer be deleted when the User Role is deleted, but the folder and its files will remain as not restricted to any role. And if the folder is restricted to a DAG, users will simply be unable to delete the DAG until all its DAG-restricted folders are deleted first. (Ticket #210829)
- Bug fix: If a user is utilizing the "Upload users (CSV)" method to update user privileges on the User Rights page, in which a user is being assigned to a Data Access Group or is being removed from a DAG, the upload process would mistakenly not log the DAG assignment/removal on the Logging page. (Ticket #210831)
- Bug fix: If a longitudinal project is in production, a normal user with Project Design privileges on the "Designate Instruments for My Events" page could possibly remove an Instrument-Event mapping (i.e., uncheck a disabled checkbox in the mappings table), which they are not allowed

to do to projects in production, if they know how to manipulate the webpage in specific ways and then click the Save button.

- Bug fix: When using the Calendar Sync feature, calendar events that do not have a time specified (but only a date) might reflect an incorrect start time and end time in some external calendar applications. (Ticket #211137)
- Bug fix: When using an HTML5 video tag in user input text (e.g., field labels, survey instructions), in which the tag contains the "controls" attribute, the attribute would mistakenly be renamed to "cremored" in the resulting HTML. (Ticket #211141)
- Bug fix: For CDIS, fixed issues related to properly handling the absence of a valid FHIR access token, such as FHIR logs being saved with a "wrong format" error and also scenarios where the absence of a user ID caused unexpected behavior.
- Bug fix: When using Multi-Language Management and exporting general settings as a file, the data entry form and survey active states would mistakenly be swapped in the export file. (Ticket #211172)
- Bug fix: When a user is using the User Access Dashboard to delete or expire a user's access in a project, in some cases the action would mistakenly not get logged on the project's Logging page (although the action would be logged in the redcap\_log\_event database table, which might not be used by the project, thus making the logged event not accessible on the project's Logging page).
- Bug fix: When using Missing Data Codes in a project, in which a Text field with field validation has the [@nomissing](#) action tag, users would be able to manually hand-enter Missing Data Codes into the Text field, even though the value entered failed the field validation.
- Bug fix: When performing a data import that contains blank values for a Slider field, in which the import is set to allow blank values to overwrite existing saved values, the import process would mistakenly return an error message saying that the value must be an integer. It should instead not return any error message in this situation. (Ticket #211075)
- Bug fix: When a user has an apostrophe in their username, and the user goes to create a new project, they may not be able to access the project they just created. (Ticket #210832)
- Bug fix: The act of creating or editing an alert on the Alerts & Notifications page would get logged on the Logging page. However, the Logging page would represent the alert's "trigger\_on\_instrument\_save\_status" attribute incorrectly, displaying "any\_status" when the alert is set to be triggered when an instrument is saved with Complete status only and as "complete\_status\_only" when set to be triggered on any form status. Note: The alert itself would be saved correctly, but the logged event for creating/editing the alert would merely be inaccurate. (Ticket #210832)
- Bug fix: In some cases when an external module is being used, a fatal PHP error might occur for certain PHP versions. (Ticket #211611)
- Bug fix: When a field variable is being piped or used in logic, and the field is prepended with the Smart Variable [first-event-name] or [last-event-name], in which the current context is a

different instrument on which the field itself is located, the event field pair might result in a blank value or an incorrect value. (Ticket #210930)

## Version 13.7.8

### CHANGES IN THIS VERSION:

- Bug fix: When using Twilio, it would mistakenly not send SMS messages to U.S. phone numbers with an 934 area code. (Ticket #90686b)
- Bug fix: If the system-level setting "ENABLE FILE UPLOADING FOR THE FILE REPOSITORY MODULE" is set to "disabled", users would still be able to upload files into the File Repository in any project. Bug emerged in REDCap 13.1.0. (Ticket #210765)
- Bug fix: The documentation for using reports as filters in Smart Charts, Smart Tables, or Smart Functions was confusing and has been updated for clarity. It notes now that when referencing a unique report name in Smart Charts, Smart Tables, or Smart Functions, no other filtering parameters can be used (e.g., DAGs, events) with the report filter and thus any other filters will be ignored. If users wish to additionally filter by DAGs and/or events, it is recommended that they add such filtering to the report itself by editing the report. The wizard on the Project Dashboard page has also been updated to reflect this.
- Bug fix: When using the @Wordlimit or @charlimit action tag on a Text field, the first field on the page that uses either action tag might have its "X characters remaining" label or "X words remaining" label, respectively, duplicated multiple times below the field itself. (Ticket #208658)
- Bug fix: The example Perl code in the API Playground for making Curl calls was outdated and would not run successfully for some users.
- Bug fix: When using MyCap in a project, a blank Menu might be displayed for participants when using the MyCap mobile app, specifically for iOS devices.

## Version 13.7.7

### CHANGES IN THIS VERSION:

- **Major bug fix:** When a user has File Repository user privileges in a project with the e-Consent Framework enabled on one or more instruments, the user would mistakenly be able to download the e-Consent PDF files stored in the PDF Survey Archive folder in the File Repository, even when the user does not explicitly have "Full Data Set" data export rights for the given instrument. In order to download the e-Consent PDFs, the user should have "Full Data Set" data export rights for the given instrument. (Ticket #210214)
- Bug fix: Some MyCap-related pages that deal with PROMIS instruments (auto-scoring and adaptive) might mistakenly crash due to a fatal PHP error when using PHP 8.
- Bug fix: If the Online Designer displays an error icon next to a MyCap-enabled instrument, it would allow the user to click the icon and attempt to try to fix the errors when the project is in production mode; however, it would fail to fix it and just re-display the error. Instead, it will now



inform the user that errors exist but that they must put the project in draft mode first before they can fix the errors. (Ticket #210179)

- Bug fix: When using Duo two-factor authentication, if the system is set to "Offline", it would mistakenly prevent administrators from successfully logging in via Duo 2FA. (Ticket #202197)
- Bug fix: When a user is updating a language on the Multi-Language Management setup page, some import settings, such as the "Keep existing translations" option, would mistakenly not be honored during the language update process. (Ticket #210395)
- Bug fix: In longitudinal projects with multiple arms, certain actions (such as deleting a record, renaming a record, and others) would mistakenly execute SQL queries that were not structured correctly and thus might make the database server unnecessarily slow due to long query times.
- Bug fix: When using certain action tags on a field where the value on the right side of the equal sign in the action tag definition is not wrapped in single quotes or double quotes and additionally other annotation text follows after the action tag in the Field Annotation text (e.g. `@charlimit=8 More text here`), the action tag might not be interpreted successfully and thus might not get enforced. (Ticket #210175)
- Bug fix: If a survey is using a system-level theme or a user-saved custom theme, the theme colors would mistakenly not get preserved in the Project XML file if a user exports the Project XML file and then creates a new project with it. (Ticket #210371)
- Bug fix: When using the Data Resolution Workflow feature, if a user executes Data Quality rule H, fields that have been marked as "Verified data value" would mistakenly appear in the list of discrepancies (they should not appear there by default) and would not appear as "verified" in the DQ popup. (Ticket #209447)
- Bug fix: Using an [X-event-name] Smart Variable in combination with an [X-instance] Smart Variable in logic, calculations, or piping might cause the evaluation of the logic/calc/piping not to be performed successfully. (Ticket #208887)
- Bug fix: When using the Clinical Data Pull, the EHR Launch process might mistakenly fail. (Ticket #210523)
- Bug fix: The CDIS messaging feature might mistakenly display the phrase "invalid date" where the date/time of the message should be.

## Version 13.7.6

### CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in the File Repository in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way inside the filename of an uploaded file. The user must be logged in to REDCap and also must have File Repository privileges in the project in order to exploit this. (Ticket #210134)

- Bug fix: When an instrument has an embedded field that is immediately followed by a piped field or by another embedded field (with no space between them), the field/value might mistakenly not be rendered in the exported PDF of that instrument. (Ticket #210165)
- Bug fix: A fatal PHP error might occur related to specific CDIS processes.
- Bug fix: A fatal PHP error might occur related to CDIS when performing the Standalone launch inside REDCap. (Ticket #209840)
- Bug fix: When viewing the PDF Survey Archive files for the e-Consent Framework in the File Repository, if the system-level e-Consent setting "Capture the IP address..." is set to "Do NOT capture IP address", the table header in the File Repository would mistakenly say "IP Address" instead of "Identifier (Name, DOB)". (Ticket #209302)
- Bug fix: When using the Control Center page to update the database tables to support full Unicode, in some situations the resulting SQL might mistakenly contain a double comma, which would result in SQL errors and prevent the process from completing successfully. (Ticket #209856)
- Bug fix: When using Multi-Language Management and using the Right to Left (RTL) setting when there are multiple choice fields with horizontal alignment, the choices might not always display correctly. (Ticket #209612)
- Bug fix: When taking a survey while using a mobile device, the page would auto-scroll unnecessarily after completing a multiple choice field that has one or more visible fields embedded inside it. In this case, the page should not auto-scroll when the field contains embedded fields. (Ticket #208523)
- Bug fix: When a user selects the option "Remove all date and datetime fields" when exporting data, or if that option is automatically imposed upon the user due to having De-Identified data export rights, survey completion timestamp fields would mistakenly not be removed from the resulting data export file. (Ticket #208758)
- Bug fix: When a project is in Analysis/Cleanup status and the current user does not have Project Design & Setup privileges, the Project Home page and Project Setup page would mistakenly display a "Modify" button in the yellow section at the top of the page describing if users can modify records or not. This button should only be displayed for users with Design rights. Clicking the button would not actually change anything though, so this issue is more of an aesthetic issue that could cause confusion. (Ticket #107257)
- Bug fix: If an unclosed HTML comment (i.e. "<!--" without quotes) exists in user-defined text that is displayed on the page (e.g., field label, survey instructions, a piped value from a Text field), it would mistakenly cause the page content to be truncated, thus preventing the user from seeing any of the page after where the text is located. (Ticket #207897)
- Bug fix: A missing LOINC code was added to the CDIS mapping features.
- Bug fix: If the URL of another REDCap server exists in user-defined text that is displayed on the page (e.g., field label, survey instructions, a piped value from a Text field), the REDCap version number in the URL would mistakenly be replaced with the REDCap version number of the

current server. It should never replace the REDCap version number in any URLs unless the URL corresponds to the current REDCap server. (Ticket #208528)

- Bug fix: When using Twilio or Mosio for a survey implemented as an SMS conversation, Yes/No fields and True/False fields would not have their field labels rendered correctly in the conversation. Instead of their field label, it would display "No" or "False", respectively. (Ticket #209624)
- Bug fix/change: The @DOWNLOAD-COUNT action tag documentation has been updated for clarity to explain that if a field with @DOWNLOAD-COUNT also utilizes @inline or @INLINE-PREVIEW and displays an inline PDF that has been uploaded, if a user downloads the file via the inline PDF controls (which are generated by the browser and not by REDCap), the download will not get properly counted via @DOWNLOAD-COUNT. This is to clarify that @DOWNLOAD-COUNT only works when users/participants click the file download link on the page. (Ticket #208354)
- Bug fix: If an administrator does not specifically have "Modify system configuration pages" admin rights, the date field on the Cron Jobs page in the Control Center would mistakenly be disabled.
- Bug fix: If an inline image was added to text on an instrument via the rich text editor and then the project was later copied, the image would display correctly on the data entry form in the project copy, but it would mistakenly not display when viewing the instrument as a survey in the project copy.
- Bug fix: In certain scenarios, a couple fatal PHP errors might occur on survey pages when using PHP 8. (Ticket #210196)

## Version 13.7.5

### CHANGES IN THIS VERSION:

- Bug fix: On certain occasions, the Control Center and/or Configuration Check page might mistakenly display the warning that "Some non-versioned files are outdated", which might be incorrect and a false positive.
- Bug fix: A fatal PHP error might occur when using Duo for two-factor authentication.
- Bug fix: A fatal PHP error might occur when attempting to send emails via the Email Users page, thus preventing the emails from being sent.
- Bug fix: A fatal PHP error might occur related to CDIS when performing the EHR launch of the REDCap window inside the EHR user interface.

## Version 13.7.4

### CHANGES IN THIS VERSION:

- **Critical security fix:** A Blind SQL Injection vulnerability was found on data entry forms and survey pages, in which a malicious user could potentially exploit it and execute arbitrary SQL

commands on the database by manipulating an HTTP request in a specially-crafted way. This bug affects all known REDCap versions.

- **Critical security fix:** A PHP Deserialization Remote Code Execution vulnerability was found in which a malicious user who is logged in could potentially exploit it by manipulating an HTTP request to a specific CDIS-related page while manipulating a certain CDIS-related cookie in a specific way. If successfully exploited, this could allow the attacker to remotely execute arbitrary code on the REDCap server. This vulnerability exists in REDCap 13.0.1 and higher.
- **Critical security fix:** A Blind SQL Injection vulnerability was found when calling certain API methods, in which a malicious user could potentially exploit it and execute arbitrary SQL commands on the database by entering specially-crafted data into a Text field, changing the field to a File Upload field, and then calling the Delete File or Import File API method. This bug affects all known REDCap versions.
- **Major security fix:** An SQL Injection vulnerability was found on a MyCap-related page, in which a malicious user could potentially exploit it and execute arbitrary SQL commands on the database by manipulating an HTTP request in a specially-crafted way. In order to exploit this, the user must be logged in as a REDCap user and must also have one or more instruments enabled as MyCap tasks.
- **Major security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way on many pages that output user-defined text onto a REDCap webpage. This bug affects all versions of REDCap.
- Bug fix: After unsuspending a user on the Browse Users page on the "View User List By Criteria" tab, the "Display only X users" drop-down would mistakenly get reset. (Ticket #208937)
- Various PHP 8 related bug fixes related to CDIS.
- Bug fix: A new Clinical Data Mart background process would not be scheduled if the current one was taking too long to complete.
- Bug fix: PHP 8 related fix for the Data Import Tool. (Ticket #208086)
- Bug fix: When using Multi-Language Management with the e-Consent Framework, some text on the e-Consent confirmation screen at the end of the survey was mistakenly not translatable.
- Bug fix: When using Multi-Language Management, the language switcher and globe menu would not work on survey return pages when the survey is set up to show a logo *and* the option to "Hide survey title on survey page when display logo" is turned on. (Ticket #208961)
- Bug fix: When using Multi-Language Management on a survey where Google reCAPTCHA is enabled, the Google reCAPTCHA text would mistakenly not be translatable. (Ticket #208797)
- Bug fix: PHP 8 related issue on certain MyCap pages in project. (Ticket #208688)
- Bug fix: In some situations, the survey page might mistakenly throw a fatal PHP error for PHP 8. (Ticket #208147)

## Version 13.7.2

### CHANGES IN THIS VERSION:

- Change: When performing a fresh installation of REDCap, the initial version will be included in the redcap\_history\_version database table. (Ticket #208590)
- Bug fix: When using Multi-Language Management, when uploading a file on the MLM setup page to import translations into an existing language, the merging from file would mistakenly not be performed.
- Bug fix: The "Design Checker" for the Clinical Data Mart might mistakenly fail with an error when attempting to fix the structure of a CDM project. (Ticket #207348)
- Bug fix: PHP 8 related fixes for CDIS functionality.
- Bug fix: When exporting a Project Dashboard as a PDF, some parts of the page that should not be included in the PDF were included.
- Bug fix: More compatibility fixes when using Epic Hyperdrive for CDIS in the context of EHR launches.
- Bug fix: Related to CDIS, unnecessary steps were removed for the Smart on FHIR OAuth2 process.

## Version 13.7.1

### CHANGES IN THIS VERSION:

- **Major bug fix:** When using Multi-Language Management and uploading a file on the MLM setup page to import translations into an existing language, the process of merging from file would mistakenly not be performed.
- Bug fix: When downloading a PDF of an instrument, the PDF would only download in the desired language if it was set to active for MLM in Data Entry mode. It should not require a language to be active in Data Entry mode to allow downloads of PDFs in that language.

## Version 13.7.0

### CHANGES IN THIS VERSION:

- **New features:** New Multi-Language Management workflow for adding new languages to projects, plus many other improvements.
  - Improved workflow and user interface for adding new languages to projects.
  - Project languages can now "subscribe" to system languages (i.e., any changes/additions to UI translations made in the Control Center will automatically be visible in projects).
  - Several new administrator options to control how new languages can be initialized in projects (independently allow/disallow initialization from system languages, language files, or from scratch). These (global) settings can be overruled on a project by project basis.

- Editing/updating of existing languages has been redesigned and split into separate edit (rename, etc.) and update (sync with system languages or import translations from files) dialogs.
- Added an option to download (empty- i.e. without data) PDFs of all or individual instruments.
- The default setting for the ASI Language Source is not "Language preference field" (instead of "User's or survey respondent's active language").
- Many user interface fixes related to the switch to Bootstrap 5 in REDCap 13.4.0.
- Bug fix: MyCap push notifications might mistakenly not work when using a proxy for the REDCap web server. (Ticket #207578)
- Bug fix: When using Multi-Language Management, the “:value” piping modifier would not mistakenly not work when performing piping on MLM-enabled forms and surveys. (Ticket #207629)
- Bug fix: When using date-based or time-based [survey-X] Smart Variables in conjunction with a [X-instance] Smart Variable while also using the ":value" modifier (e.g., [survey-time-completed:my\_survey:value][last-instance]), a blank value might mistakenly be returned instead of the expected value. (Ticket #206098b)
- Bug fix: When using the Copy Project feature and selecting to copy the reports in a project, the resulting new project's reports would mistakenly not have the same unique report names. The unique report names of the new project should be exactly the same as the original project. (Ticket #207248)
- Bug fix: When piping a data value into the choice label of a multiple choice field on a repeating instrument, the correct data value might mistakenly not get piped correctly when viewing the choice label on a report or in a CSV Labels data export. (Ticket #207193)
- Bug fix: When using the Calendar Sync feature, the calendar feed or export might mistakenly be off by one hour for cities in specific time zones. (#206585b)
- Bug fix: When importing and exporting user rights or user roles via CSV files on the User Rights page, some user privilege categories (e.g. Alerts & Notifications) might mistakenly not be found in the downloaded CSV user rights/roles files. (Ticket #206747, #207132)
- Bug fix: When selecting files in the File Repository and clicking the Move button, the "folder" drop-down list in the dialog would mistakenly display folders that have been deleted. (Ticket #207763)
- Bug fix: When viewing multi-page inline PDFs on the e-Consent certification screen on surveys when using certain devices, such as iPads, only the first page of the PDF might be viewable on the webpage. An option is now displayed near the bottom of the e-Consent certification screen on surveys to allow the participant to download and view the PDF in another browser tab if they are using a device that does not support multi-page inline PDFs. (Ticket #205407)
- Bug fix: When exporting a project or project data as CDISC ODM/Project XML, a fatal PHP error might occur when using PHP 8. (Ticket #78389)

- Bug fix: When using Multi-Language Management, the error dialog displayed when a user enters an invalid choice for an auto-complete drop-down field was mistakenly not available for translation on the MLM setup page. (Ticket #207825)
- Bug fix: When using CDIS, the project menu was not hidden in an EHR launch context.
- Bug fix: When downloading a PDF of an instrument that contains a Descriptive Text field with an inline PDF attachment, in certain cases the inline PDF might overlap the next field below it when instead it should begin a new page right after the inline PDF. (Ticket #206391)
- Bug fix: Piping Smart Variables or field variables into the Data Entry Trigger URL would mistakenly cause "span" HTML tags to be inserted into the URL.
- Updates to the External Module Framework: 1) Prevented uncaught exceptions in the PHP error log, and 2) Added system setting support in getSubSettings().

## Version 13.6.1

### CHANGES IN THIS VERSION:

- Change/improvement: CDIS-related tasks now use a new memory monitoring feature to improve system stability by preventing out-of-memory crashes, in which it actively tracks memory usage and stops long-running, memory-intensive background processes when the PHP thread's memory usage approaches a predefined threshold (75% by default).
- Various fixes and changes to the External Module Framework.
- Change/improvement: When searching for action tags in the Action Tag list/dialog, any action tags added to the dialog via an External Module would mistakenly not be included in the search as the user types in the search box. (Ticket #207364)
- Bug fix: If a user does not have "Add/Edit/Organize Reports" privileges, "Report B" would mistakenly not appear for them on the "My Reports & Exports" page. (Ticket #206987)
- Bug fix: When using DDP Custom, dates were not converted to strings in the JSON encoding process for the data web service. (Ticket #206063)
- Bug fix: A non-existent CDP-related CSS file would get called on the Online Designer page and thus would throw a silent 404 error in the browser console. (Ticket #207222)
- Bug fix: Medication statuses were mistakenly being ignored in CDIS mapping and thus were not being imported from the EHR.
- Bug fix: When re-evaluating Alerts & Notifications, in which one or more alerts are recurring, the process might report an incorrect number of alerts that were removed/unscheduled during re-evaluation as a result of the alert's conditional logic no longer being True. This does not affect any behavior but only the count of alerts that were removed/unscheduled during the re-eval process. (Ticket #206980)
- Bug fix: Data entry forms and survey pages might mistakenly crash due to a fatal PHP error in very specific scenarios when using PHP 8. (Ticket #207349)
- Bug fix: On the MyCap-enabled project, the Online Designer might mistakenly crash due to a fatal PHP error in very specific scenarios when using PHP 8. (Ticket #207381)

- Bug fix: In certain places throughout REDCap where the Logic Editor is used, when modifying the text in the editor, an error might appear saying "Odd number of single quotes exist" (or something similar) when apostrophes, quotes, parentheses, and some other characters are utilized in an "inline comment" (beginning with // or #) in the editor. (Ticket #207092)
- Bug fix: When copying the MyCap generated invitation text, which would contain a REDCap version number in the URL of the QR code image, and pasting it onto a webpage in REDCap, such as in the survey completion text or in a field label, the QR code would mistakenly fail to load on the page if that older version of REDCap had been removed from the web server.

## Version 13.6.0

### CHANGES IN THIS VERSION:

- **New features for Clinical Data Interoperability Services (CDIS):** New additions to the CDIS Configuration page in the Control Center.
  - Custom Mapping: Institutions can now define their own mappings and specify additional LOINC codes for labs and vitals.
  - Metadata Download: Users can download CSV files containing metadata for mapping FHIR data to REDCap's fields. Metadata files are available for DSTU2 and R4 versions.
  - Custom FHIR Authentication Parameters: This new feature enables administrators to define custom HTML query parameters for the SMART on FHIR authentication process. By allowing institutions to specify key-value pairs along with context information, such as "standalone launch," "EHR launch," and "always," this enhancement provides increased flexibility during authentication. The user interface facilitates the specification of multiple entries, thus granting administrators greater control over the authentication process.
- **Minor security fix:** An SQL Injection vulnerability was found on a MyCap-related page, in which a malicious user could potentially exploit it and execute arbitrary SQL commands on the database by manipulating an HTTP request in a specially-crafted way. In order to exploit this, the user must be logged in as a REDCap user and must also have one or more instruments enabled as MyCap tasks.
- **Major bug fix:** If a REDCap user knows the report\_id of a report from another REDCap project to which they do not have access, they could manipulate the URL of a report in one of their own projects by replacing the report\_id in the URL with the other project's report\_id and thus be able to view (but not export) all the data from the other project's report. Note: The user would not be able to access anything else from that other project though. Additionally, the user must be logged in and must have access to at least one project in order to exploit this issue. Bug emerged in REDCap 12.2.0. (Ticket #206894)
- Bug fix: When using the Calendar Sync feature, the calendar feed or export might mistakenly be off by one hour for cities in specific time zones. (Ticket #204252, #206585)



- Bug fix: If using Multi-Language Management, if a radio or checkbox field exists on an MLM-enabled survey that also has the Enhanced Choice survey option enabled, in which another field on the survey page is embedded inside one of that field's choice labels, the field would not be successfully embedded on the page but would display an error message saying that that field has been embedded multiple times on the page, which is not true. This bug was supposedly fixed in REDCap 13.5.2, but mistakenly it was not.
- Bug fix: If a field has been piped into the min or max validation range of a Text field, in which the piped field does not have a saved value yet, a user attempting to import data will mistakenly get an error stating that the field "should not be greater than the field maximum" or "less than the field minimum", which would thus prevent the user from importing the data. (Ticket #203219)
- Bug fix: When a user attempts to place a production project into draft mode, it might mistakenly just reload the same page with no changes, thus preventing the project from being put in draft mode. This often occurs when multiple users are changing things in the Online Designer near the same time while in production. (Ticket #6346b)
- Bug fix: Some project-level features in the Additional Customizations popup were mistakenly not being added to the Project XML file when exporting->importing a project. These include the following features: Enable the Data History popup, Display the Today/Now button, Prevent branching logic from hiding fields that have values, and Require a 'reason' when making changes to existing records. (Ticket #206575)
- Bug fix: When using the "Copy existing choices" feature for multiple choice fields in the Edit Field popup in the Online Designer, it would mistakenly strip out all HTML in the choice labels. (Ticket #206644)
- Bug fix: When uploading an Instrument Zip file that contains survey settings, in which the survey theme of the survey does not exist on the current REDCap server, the upload would hang and never finish. Now, if the survey theme does not exist on the current REDCap server, the default survey theme will be used instead. (Ticket #206167)
- Bug fix: When viewing the App Data Dumps tab on the REDCap Mobile App page and clicking an "Included Records" button, it would mistakenly not display the list of records from the data dump file. Bug emerged in REDCap 13.4.0.
- Bug fix: When viewing the REDCap Mobile App's "App Data Dumps" page and clicking the "Import Data from File" button for a specific data dump file, it would mistakenly throw a fatal PHP error on the page when using PHP 8. (Ticket #137777b)
- Bug fix: Fixed compatibility issue when using Epic Hyperdrive for CDIS in the context of EHR launches. It addresses a known issue where the cookie samesite policy conflicts with Hyperdrive. By detecting the Hyperdrive user agent, REDCap disables the samesite policy, ensuring seamless integration and functionality.
- Bug fix: When an administrator uses the "Auto-fill" link on a survey with the "Enhanced Choices" option enabled, it might mistakenly fail to work for some checkboxes and radio button fields. (Ticket #206769)

- Bug fix: CDIS-related processes might fail in specific cases due to PHP 8 incompatibility.
- Bug fix: A missing LOINC code was added to the CDIS mapping features.
- Bug fix: When deleting scheduled survey invitations on the Survey Invitation Log using the "Delete all selected" button, it might crash with a fatal PHP error if deleting only one participant at a time when using PHP 8.

## Version 13.5.4

### CHANGES IN THIS VERSION:

- **Major bug fix:** Due to an unexpected issue with the deployment of 13.5.3, some fixes from 13.5.2 mistakenly did not get included in 13.5.3. Thus, 13.5.4 will stand as a replacement for 13.5.3.

## Version 13.5.3

### CHANGES IN THIS VERSION:

- **Major bug fix:** When a participant completes the first page of a multi-page survey, it might mistakenly create a duplicate record that contains only the responses submitted on the first survey page. This does not affect single-page surveys. (Ticket #206613)
- **Major bug fix:** When a participant clicks the "Save & Return Later" button on the first page of a multi-page public survey, and then returns to complete the survey later, it might mistakenly not update the original create but would instead create a duplicate record containing the values submitted on the last survey page. This does not affect single-page surveys. (Ticket #206623)

## Version 13.5.2

### CHANGES IN THIS VERSION:

- **Improvement/change:** Improvements to the usability of "Email Users" page in the Control Center. Previously, the page featured buttons for selecting user groups and a separate "search" input field for table filtering. Now the buttons' functionality has been modified to filter the table directly, just like the "search" input, allowing admins to quickly filter the table by clicking on the buttons, and subsequently select all or specific users from the displayed list. This new behavior simplifies the user selection process, providing a more intuitive experience, and enabling efficient user filtering.
- **Major bug fix:** If a field is required and is embedded in the choice label of a multiple choice field on a multi-page survey, in which the field itself has branching logic and is also used in the branching logic or calculation of another field on a separate survey page, the field's value might mistakenly get erased when submitting a survey page where the field does not exist but where the field is used in a branching logic or calculation.

- Change: All errors in the redcap\_error\_log database table that are more than 30 days old will be automatically removed (to free up space) via a routine cron job.
- Bug fix: Fixed issue with the “Navigate to page” feature when navigating to the Multi-Language Management page in the Control Center.
- Bug fix: A JavaScript error would mistakenly get thrown on the Alerts & Notifications page when creating an alert. This may or may not cause other issues on the page.
- Bug fix: A JavaScript error would mistakenly get thrown on the survey page after clicking the Save button on a multi-page survey, which might cause some things not to work on the survey. (Ticket #206073)
- Bug fix: A JavaScript error would mistakenly get thrown on the Survey Settings page, but this would not affect anything on the page.
- Bug fix: If using Multi-Language Management, the translated choice labels for Yes/No and True/False fields would mistakenly not display correctly on the Codebook page. (Ticket #206001)
- Bug fix: When using an [X-instance] Smart Variable with other survey-related Smart Variables while using PHP 8, it might cause a fatal PHP error if no repeating instances exist yet for the targeted repeating instrument/event. (Ticket #206098)
- Bug fix: When creating or editing a report, pressing the Enter key while in any text input (e.g., the Value text box in Step 3) would mistakenly cause the "List of users with access" popup to display. (Ticket #204875)
- Bug fix: The login page for "Shibboleth & Table-based" authentication might not display the Shib and Table-based login options correctly. Bug emerged in REDCap 13.4.0. Bug was supposedly fixed in REDCap 13.4.3 and 13.4.9 but mistakenly was not. (Ticket #204025)
- Bug fix: When a non-REDCap user receives a Send-It download link via email for a REDCap installation that is using a directory-based authentication method (e.g., Shibboleth), the recipient would never be able to download the file because it would mistakenly always require them to log in as a REDCap user.
- Bug fix: If using Multi-Language Management, the same field could mistakenly be embedded multiple times on the same page when embedded via MLM translations. (Ticket #206370)
- Bug fix: If using Multi-Language Management, if a radio or checkbox field exists on an MLM-enabled survey that also has the Enhanced Choice survey option enabled, in which another field on the survey page is embedded inside one of that field’s choice labels, the field would not be successfully embedded on the page but would display an error message saying that that field has been embedded multiple times on the page, which is not true.
- Bug fix: When opening a data entry form or survey page in certain versions of iOS in Mobile Safari or in Internet Explorer, the page would never fully load due to a JavaScript error. This bug was supposedly fixed several versions earlier but mistakenly was not. (Ticket #202806c)
- Bug fix: When downloading the Project XML file for a project, in some circumstances the process might fail with a fatal PHP error when using PHP 8. (Ticket #206404)

- Bug fix: If a survey has "Save & Return Later" enabled and allows participants to return without needing a return code, but it does not allow them to return if the survey has already been completed, then in certain circumstances after a participant completes a public survey in this case, in which they have a unique survey link back to their response (e.g., from an email), they would mistakenly be allowed to modify their completed response. (Ticket #206154)

## Version 13.5.1

### CHANGES IN THIS VERSION:

- **Major bug fix:** When using PHP 8, if any Custom Application Links have been created and thus appear on a project's left-hand menu, it would cause every project page to crash with a fatal PHP error. (Ticket #205890)
- Bug fix: Fixed issue with the "Navigate to page" feature when navigating to the Multi-Language Management page in the Control Center.

## Version 13.5.0

### CHANGES IN THIS VERSION:

- **Major security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in a file download process in which a malicious user could potentially exploit it by inserting HTML/XML tags and/or JavaScript in a very specific way into an SVG file that is then uploaded into a File Upload field or as a Descriptive Text field attachment, and then having a logged-in REDCap user attempt to download that file using a specially crafted URL. This bug affects all versions of REDCap.
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way on many pages that output user-defined text onto a REDCap webpage. This bug affects all versions of REDCap.
- **New feature: @INLINE-PREVIEW action tag** - When this action tag is added to File Upload fields or Description Text fields, a preview button will be displayed next to the field on survey pages and data entry forms if the uploaded file is an image or PDF file. Clicking the preview button will immediately display the image/PDF inline on the page, after which it can be closed again, if desired. This allows users/participants to view the file without having to download it to their local device.
- **Improvement:** Inline image support (via Descriptive Text field, INLINE or INLINE-PREVIEW action tag, or the ":inline" piping parameter) now works for SVG and WEBP image files.
- **Improvement:** The "Contact REDCap Administrator" link/button on the left-hand project menu now supports the piping of Smart Variables in its URL if using the "Alternate URL for Contact REDCap Admin links..." setting, which is located on the General Configuration page in the Control Center. Note: Data entry specific Smart Variables (e.g., record-name, event-name)

cannot be piped; only high-level project/user-related Smart Variables can be piped (e.g. project-id, user-email).

- **Improvement:** All fatal PHP errors will now be logged in the "redcap\_error\_log" database table to aid REDCap administrators in tracking down the cause of certain PHP errors. On pages that do not disclose any details (for security reasons) about a fatal PHP error when it occurs, such as on surveys and when the user is not an administrator, the generic error message now adds the following text in small font: "REDCap Admins Only: Details of the error may be obtained by running the database query below. select error from redcap\_error\_log where error\_id = X", which can assist administrators in reporting the error.
- **Improvement:** If using Azure AD authentication (either Endpoint V1 or V2), you may now specify the tenant GUID on the Security & Authentication page, whereas in previous versions "common" was always used as the tenant value. This provides greater flexibility for those using Azure AD. (Ticket #121604)
- **Improvement:** When viewing an inline PDF (whether via Descriptive Text field, INLINE or INLINE-PREVIEW action tag, or the ":inline" piping parameter), a PDF resizer option will appear immediately below the embedded PDF, allowing users to adjust the vertical size of the PDF displayed on the page. Clicking the center button on the resizer will set the PDF to be the full height of the browser.
- **Improvement/change:** When EHR data that is fetched in a Clinical Data Pull (CDP) context is too big to be stored in the database, it will truncate the data and add the prefix "--- DATA TOO LARGE, TRUNCATED ---", which could happen when a patient has many medications, allergies, or conditions, for example.
- **Change:** Survey completion timestamp fields will no longer return errors when a user attempts to import them via data import. Instead, they will merely return a warning, and their value will be ignored during the import process.
- **Bug fix:** When using Multi-Language Management, the language switcher button displayed at the top of data entry forms would not be positioned correctly when compared to other buttons right next to it.
- **Bug fix:** When using MyCap, the MyCap "getStudyImages" API test would mistakenly fail if the project has been copied or created via Project XML upload, in which the images zip file was not getting stored in the back-end database.
- **Bug fix:** When using Multi-Language Management, snapshots would be created for all projects when approving DRAFT mode, even when MLM was not in use (no languages). Now a snapshot is made only when MLM is active (not disabled) AND there is at least one language defined. Additionally, there was no automatic snapshot taken when projects are moved to production initially. Now a snapshot is taken automatically (same rules as for DRAFT).
- **Bug fix:** When opening a data entry form or survey page in certain versions of iOS in Mobile Safari or in Internet Explorer, the page would never fully load due to a JavaScript error. This bug was supposedly fixed two versions earlier but mistakenly was not. (Ticket #202806b)

- Bug fix: When utilizing the "Include PDF of completed survey as attachment" option in the Confirmation Email section on the Survey Settings page for a survey that is using the e-Consent Framework, the PDF consent form that is attached to the email would mistakenly not include the e-Consent Type in the filename of the PDF. It should have listed the e-Consent Type as part of the filename for the email attachment.
- Bug fix: When viewing an open conversation in REDCap Messenger, the "Actions" drop-down would mistakenly not open when clicked. Bug emerged in REDCap 13.4.0.
- Bug fix: When performing randomization on a record, a JavaScript error might mistakenly occur, which would cause calculated fields on the current page not to be recalculated post-randomization. (Ticket #205428)
- Bug fix: When using Multi-Language Management, the Survey Login page text might mistakenly not get translated. (Ticket #205427)
- Bug fix: The DAG Switcher API method would mistakenly always return the message "ERROR: Invalid DAG" even when the API is being called correctly. Bug emerged in 13.1.27 LTS and 13.4.11 Standard. (Ticket #205557)

## Version 13.4.13

### CHANGES IN THIS VERSION:

- **Medium security fix:** A Blind SQL Injection vulnerability was found on a MyCap-related page, in which a malicious user could potentially exploit it and execute arbitrary SQL commands on the database by manipulating an HTTP request in a specially-crafted way. In order to exploit this, the user must be logged in as a REDCap user and must also have one or more instruments enabled as MyCap tasks. (Ticket #205078)
- **Medium security fix:** A vulnerability was found in the "Save & Return Later" feature on survey pages, in which a malicious user could potentially exploit it by manipulating an HTTP request in a specially-crafted way that would allow them to email themselves the private survey link of another survey participant. If return codes are not required to return to the survey, using brute force methods the attacker might be able to view sensitive data that survey participants have entered. However, if return codes are required, then the attacker will not be able to view any survey responses. (Ticket #205081)
- **Major bug fix:** The Project Setup->Other Functionality page might mistakenly crash due to a fatal PHP error when using certain versions of PHP 8.
- **Major bug fix:** When using Multi-Language Management and saving MLM translations on the MLM setup page, all Action Tag translations and all choice label translations for multiple choice fields would be permanently lost upon save. Bug emerged in the previous release. (Ticket #205076, #205146)
- Bug fix: When downloading the Project XML file for a project, in some circumstances the process might fail with a fatal PHP error when using PHP 8. (Ticket #204965)

- Bug fix: For CDIS-related FHIR calls specifically to Epic, the FHIR coding systems have been updated to reflect the Epic FEB23 update.

## Version 13.4.12

### CHANGES IN THIS VERSION:

- **Critical security fix:** A Blind SQL Injection vulnerability was found on survey pages, in which a malicious user could potentially exploit it and execute arbitrary SQL commands on the database by manipulating an HTTP request to the survey end-point in a specially-crafted way.
- Improvement: More options for the new “Navigate to page” feature for administrators: 1) Admins can now navigate to Control Center pages via typing “cc”, 2) Help is context sensitive (project links are disabled and “cc” prefix is removed while in the Control Center), 3) Destinations in the popup are now clickable links (project links are not clickable when viewed on a Control Center page), 4) Holding CTRL while pressing ENTER or clicking a link will open in a new tab, and 5) External Module related pages support the EM framework’s alternate /external\_modules/ directory location, if being used.
- Bug fix: Hovering over the “view list” links to view scheduled/sent alerts on the Alerts & Notifications page would mistakenly not display anything. Bug emerged in REDCap 13.4.0 (Standard).
- Bug fix: When using the [form-link] or [survey-link] Smart Variable with Custom Text while also having the [new-instance] Smart Variable appended to it, it would mistakenly return a blank string instead of a survey link.
- Bug fix: Fixed more issues related to error checking for the Imagick PHP extension check on the Configuration Check page.
- Bug fix: When exporting a PDF of a survey response in some specific ways, it might mistakenly return the word “ERROR” instead of outputting the PDF. Bug emerged in REDCap 13.4.9. (Ticket #204340)
- Bug fix: If some Smart Variables are used in a calculation or conditional logic, in which the evaluation of the calculation/logic results in a blank/empty string (i.e., after applying the current context and the current data during the logic evaluation process), an incorrect value might be returned from the calculation/logic. For example, this could cause calculated fields and Data Quality rule H not to function as expected. (Ticket #203945)
- Bug fix: When using Multi-Language Management, fields on a data entry form that are piped on the page would mistakenly disappear from the page immediately after the form has loaded. (Ticket #204372)
- Bug fix: When using Multi-Language Management, the Form Complete status field on data entry forms would mistakenly not change to the correct translated text when switching languages on the page while using iOS. (Ticket #203189b)
- Bug fix: When opening a data entry form or survey page in certain versions of iOS in Mobile Safari, the page would never fully load due to a JavaScript error. (Ticket #202806, #204332)

- Bug fix: When a Survey Base URL is defined in the Control Center and a survey participant clicks the "Close survey" button after completing a survey, if the survey had been opened in the participant's browser from outside of REDCap, such as clicking a link in an email, in which the browser will not let the webpage close the tab but instead falls back to displaying the "You may now close this tab/window" message on the page, the participant would mistakenly not be taken to a URL beginning with the Survey Base URL but would instead be taken to the non-survey Base URL defined in the Control Center, which could be confusing to the participant. (Ticket #204422)
- Bug fix: When attempting to upload Alerts & Notifications via CSV file, if the "email-to" field contains the value [survey-participant-email], REDCap would mistakenly return an error message saying the value isn't valid when it actually is. (Ticket #201256)
- Bug fix: When using Multi-Language Management, in certain cases an error would occur when attempting to import MLM settings via CSV or JSON files, thus preventing the upload from completing.
- Bug fix: If proxy server settings have been provided on the General Configuration page in the Control Center, those settings would mistakenly fail to be used by the internal MyCap API check on the MyCap Configuration Check page and thus could result in a false positive saying that issues exist.
- Bug fix: When using Multi-Language Management and using the eConsent Framework, the footer of the eConsent PDF, when displayed at the end of a survey, would mistakenly not have its text translated by MLM. This issue was supposedly fixed in the previous version but mistakenly was not. (Ticket #204669)
- Bug fix: When a user tries to send a MyCap announcement to their MyCap participants, the Announcement dialog would always mistakenly close before a message can be added. (Ticket #204571)
- Bug fix: When using Multi-Language Management on a survey, the Font Resize buttons might mistakenly not display text for the correct/selected language when hovering over the buttons. Bug emerged in REDCap 13.4.0.
- Bug fix: When clicking inside the "Deactivate" and "Permanently Delete" dialogs on the Alerts & Notifications page, the dialog would mistakenly close. In addition, the Cancel buttons were also not working in the dialogs. Bug emerged in REDCap 13.4.0. (Ticket #204799)
- Bug fix: The Email Users page in the Control Center might become unusable and/or lock up when attempting to select users to email when lots of users (thousands or tens of thousands) exist in REDCap. (Ticket #203947)
- Bug fix: The wrong language variable is used for the WebDAV file server check on the Configuration Check page. (Ticket #204838)
- Bug fix: The Share->Copy Link functionality might stop functioning for files in the File Repository if attempting to perform the functionality in a specific way more than once while on the page. (Ticket #204876)



- Bug fix: When utilizing the "Include PDF of completed survey as attachment" option in the Confirmation Email section on the Survey Settings page for a survey that is using the e-Consent Framework, the PDF consent form that is attached to the email would mistakenly have REDCap's back-end stored filename as the PDF filename rather than the intended user-friendly version of the filename. Additionally, the consent PDF was mistakenly not listed by name in the logged details of the event on the Logging page.

## Version 13.4.11

### CHANGES IN THIS VERSION:

- **Critical security fix:** A PHP Deserialization Remote Code Execution vulnerability was found in which a malicious user who is not logged in could potentially exploit it by manipulating an HTTP request to a survey page while uploading a specially crafted file. If successfully exploited, this could allow the attacker to remotely execute arbitrary code on the REDCap server. This vulnerability exists only in the following REDCap versions: LTS 13.1.11 through 13.1.26 and Standard Release 13.3.0 through 13.4.10.
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in a file download process in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way into an HTML file that is then uploaded into a File Upload field or as a Descriptive Text field attachment, and then having a logged-in REDCap user attempt to download that file using a specially crafted URL.
- **Major bug fix:** Partially completed one-page surveys might mistakenly behave as if the participant has not started the survey if they return to the partially completed survey after having entered some data. (Ticket #204003)
- **Major bug fix:** When a survey participant opens a public survey under certain conditions, such as when multiple participants are using the same device, the survey page (and/or subsequent pages) might mistakenly get populated with the previous participant's responses, thus allowing participants to see data they should not. This fix reverts functionality from Ticket #142376 (from REDCap 13.4.3 Standard and 13.1.19 LTS) that attempted to gracefully recover a participant's session if they used their browser's BACK button on a survey as a means of returning to a previous survey page. (Ticket #204164)
- **Improvement:** When viewing PDF attachments on Descriptive Text fields on a data entry form or survey, in which the PDF is set to be displayed inline, the PDF frame is now adjustable at the bottom so that its vertical size may be modified by the user/participant for better viewing.
- **Improvement:** Searching has now been added in the Action Tags popup and Smart Variables popup to allow users to find content faster in those popups.
- Bug fix: When publishing a MyCap configuration in a project, some chart fields might not get stored correctly in the config and thus might affect participants using the MyCap mobile app on iOS.

- Bug fix: When using Multi-Language Management, the @LANGUAGE-FORCE action tag (if being used on a field) would mistakenly not work as expected.
- Bug fix: When using DUO as an option for two-factor authentication, the 2FA process would mistakenly redirect users to the REDCap home page after a successful login rather than redirecting them to the current page they were originally on. (Ticket #203337)
- Bug fix: The “Field Finder” on the Codebook page might mistakenly display some HTML in the search results if the user begins the search with the letter “c”.
- Bug fix: When using Duo two-factor authentication, the REDCap login page might mistakenly be blank when using Mobile Safari on an iOS device. (Ticket #203626)
- Bug fix: If the first column of the Record Status Dashboard table is a sticky/floating column (because the table is very wide), the column's background color might mistakenly be transparent instead of a solid color, thus causing the table to look strange. (Ticket #203655)
- Bug fix: When using Multi-Language Management and using the eConsent Framework, the footer of the eConsent PDF, when displayed at the end of a survey, would mistakenly not have its text translated by MLM.
- Bug fix: Fixed issues related to error checking for the Imagick PHP extension check on the Configuration Check page. (Ticket #203313b)
- Bug fix: Requests to the survey end-point that contained "\_\_passthru" and "route" in the URL would mistakenly not get logged in the redcap\_log\_view table.
- Bug fix: When using Multi-Language Management, some browsers might attempt to auto-translate part of the webpage when viewing a page translated via MLM. Such a browser action will now be prevented in order to allow the form or survey to be viewed exactly how the user intended. (Ticket #203925)
- Bug fix: When viewing a Public Project Dashboard on PHP 8, the page might mistakenly crash due to a fatal PHP error. (Ticket #203634)
- Bug fix: DDP Custom might mistakenly fail to pull and display data correctly due to internal field-mapping issues.
- Bug fix: Some “popover” help text on various pages would mistakenly not display when a user’s cursor hovers over them. Bug emerged in REDCap 13.4.0 (Standard).
- Bug fix: Fixed an issue with the auto-adjudication setting related to the use of email addresses in a CDIS project, in which it was causing the email addresses not to be fetched from the EHR.
- Bug fix: During the MyCap EM to REDCap migration process, the migration popup was displaying the wrong "number of tasks" if there are any inadequately-enabled tasks on the EM side.
- Bug fix: If the unique group name of a Data Access Group happens to be an integer and also happens to be the same value as the Group ID number of another DAG in the same project, users would mistakenly not be able to utilize the DAG Switcher if they attempt to move in and out of the DAG whose Group ID number matches the unique group name of another DAG. (Ticket #204033)

- Bug fix: When using "&new" in a survey URL of a repeating survey, in which the URL also contains extra URL parameters for the purpose of survey pre-filling, those extra parameters would mistakenly be lost and thus will not be pre-filled after redirecting the participant to a not-yet-created repeating survey instance. (Ticket #204113)
- Bug fix: When using Multi-Language Management, some browsers might attempt to display a popup to ask the user if the page should be auto-translated by the browser. In the previous version, the auto-translate action is now prevented, but this new fix now prevents the translation popup from displaying altogether in order to reduce confusion for users/participants when using MLM. (Ticket #203925b)
- Bug fix: If the dates used together in a datediff() function or in a @CALCDATE action tag do not have the same date format, the resulting error message would mistakenly mention "Since the DATEFORMAT parameter was not provided as the fourth parameter in the equation, 'ymd' format was assumed". The date format parameter is a legacy feature and is no longer used or needed, so that specific part of the error message has been removed in these cases. (Ticket #204213)

## Version 13.4.10

### CHANGES IN THIS VERSION:

- **Major bug fix:** When copying a project and all its records, any fields that have no action tags (i.e., have nothing in the Field Annotation) would mistakenly have their value converted into a MyCap participant code for all records/events. Additionally, some repeating instance data might get orphaned or not get copied over correctly. (Ticket #203436)
- Bug fix: The MyCap mobile app might mistakenly crash in certain situations on the About page if the About page's image for the app is stored incorrectly in the project's MyCap configuration.
- Bug fix: The Control Center's Configuration Check page might mistakenly display an incorrect message that the Imagick PHP extension is not installed correctly when in fact the issue was that Ghostscript was not installed correctly on the server. (Ticket #203313)

## Version 13.4.9

### CHANGES IN THIS VERSION:

- **Critical security fix:** A Remote Code Execution vulnerability was found in the process whereby files are uploaded via File Upload fields and via the Data Import Tool, in which a malicious user could potentially exploit it by manipulating an HTTP request while uploading a specially crafted file on the Data Import Tool page, on a data entry form, or on a survey page. If successfully exploited, this could allow the attacker to remotely execute arbitrary code on the REDCap server. This vulnerability exists in all versions of REDCap.
- **Critical security fix:** An Insecure Direct Object References (IDOR) vulnerability was found, in which a malicious user could potentially exploit it by manipulating an HTTP request in a specially

crafted manner on a survey page. This could allow the attacker to export PDFs containing data of individual survey participants (potentially containing sensitive/private information). Any valid survey link (including a public survey link) could be used and manipulated in order to export a PDF containing data for any record within the project to which the survey link belongs.

- **Major security fix:** A Blind SQL Injection vulnerability was found on the Alerts & Notifications page, in which a malicious user could potentially exploit it by manipulating an HTTP request on that page or indirectly via the survey page.
- **Medium security fix:** A Path Traversal vulnerability was found in a specific endpoint relating to the Clinical Data Pull feature, in which a malicious user could potentially exploit it by manipulating an HTTP request on a specific CDP page.
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in which a malicious user could potentially exploit it by entering an HTML "iframe" tag in a carefully crafted manner into the value of a text field on a form or survey. Additionally, that text field's value must be piped to another place on that same page in order to exploit it. This bug exists in all versions of REDCap, both LTS and Standard Release.
- **Improvement:** New "Go to project page" feature for administrators only will appear on the top navbar (when not inside a project) and on the left-hand menu when inside a project. Entering the PID of a project and hitting Enter/Tab will navigate the admin directly to the project. Additionally, if the PID is followed by a specific 1-3 letter abbreviation, they can navigate to a specific page within the project- e.g., "181 an" to go to the Alerts & Notifications page in PID 181. To go to a specific record on the Record Home Page, also enter the record number- e.g., "34 rhp 999" to view record 999 on the Record Home Page of PID 34.
- **Change/Improvement:** When a participant attempts to log in to a survey via the Survey Login feature, the attempt is now logged, in which the following things are recorded in the project logging: 1) whether the login attempt was a success or failure, 2) the project fields being utilized in the login attempt, and 3) the context (e.g., the record, survey, and event).
- **Bug fix:** Long-running CDIS-related cron jobs might mistakenly prevent External Module cron jobs from running at their expected interval.
- **Bug fix:** When two administrators are viewing the Multi-Language Management page in the Control Center at the same time, the second person to navigate there will not be able to view the page while the first person is still viewing it due to a fatal PHP crash. Bug emerged in the previous version. (Ticket #202782)
- **Bug fix:** When using the "Compare" feature for data dictionaries and/or snapshots on the Project Revision History page, on certain occasions it would not perform the comparison correctly and thus would display incorrect results.
- **Bug fix:** Due to various API changes in the third-party web service used by the Field Bank feature, the Field Bank would no longer return any results if a user searched for a field in the Field Bank dialog in the Online Designer. This affects REDCap versions 10.7.0 and higher.
- **Bug fix:** When copying a MyCap-enabled project that contains records, in which the records are also being copied, the process would fail to copy the records into the MyCap Participant List in

the new project. The records would get copied correctly but mistakenly not added to the MyCap Participant List.

- Bug fix: When an administrator uses the "Auto-fill" link on a data entry form or survey, it might mistakenly fail on Text fields that lack field validation. Bug emerged in the previous version. (Ticket #202933)
- Bug fix: If the two authentication settings "Number of failed login attempts..." and "Amount of time user will be locked out after having failed login attempts..." on the Security & Authentication page somehow have non-integer values, it could cause the REDCap login page to crash with a fatal PHP error when using PHP 8. (Ticket #202976)
- Bug fix: After renaming a record in a longitudinal project and using the Form Display Logic feature, the Record Home Page might mistakenly give a fatal PHP error when using PHP 8. (Ticket #203014)
- Bug fix: The DAG Switcher table might mistakenly display a bunch of up/down arrows below the table header row due to a CSS issue.
- Bug fix: When using Multi-Language Management on form or survey, the choice label from radio button fields that are inside a matrix would fail to pipe successfully if on the page. (Ticket #201392)
- Bug fix: CDIS-related bug that could cause issues when refreshing a user's FHIR access token, in which the format of the date used to check for expiration was wrong.
- Bug fix: When using Twilio telephony services for surveys, U.S. phone numbers having the area code "986" would mistakenly not work for SMS or voice calls unless the number has a "1" prepended to it. (Ticket #203044)
- Bug fix: When clicking any of the table headers for the project list table on the My Projects page, it would mistakenly hide all the projects in the list except for those in the "Unorganized Projects" folder. Additionally, if any project folders were previously open, the user would find that all project folders had been closed after reloading the page. (Ticket #203046)
- Bug fix: The login page for "Shibboleth & Table-based" authentication might mistakenly display both the Shib and Table-based login options under the Shib login tabs when using more than one Shibboleth login option. Bug emerged in REDCap 13.4.0. (Ticket #200919b)
- Minor changes and improvements for the External Module Framework: 1) Prevented hidden settings from being stripped out of `getSubSettings()` calls, and 2) Added the `isAuthenticated()` method.
- Bug fix: When using Multi-Language Management, the `@LANGUAGE-FORCE` action tag might not work as intended under specific conditions. (Ticket #202553)
- Bug fix: When using an `[aggregate-X]` Smart Variable in a calculation or any kind of conditional logic or branching logic, in which the value returned for the `[aggregate-X]` Smart Variable is greater than "999", the logic might mistakenly not function as expected. (Ticket #203063)

- Bug fix: When using Multi-Language Management on a data entry form, the MLM language switcher drop-down displayed on the form might mistakenly be obscured and/or not visible while using certain iOS devices. (Ticket #203189)
- Bug fix: The link to the Training Videos on the login page would be incorrect in some situations. (Ticket #203245)
- Bug fix: When an adaptive or auto-scoring survey that has been downloaded from the REDCap Shared Library is not the first instrument in the project and is set to "Redirect to a URL" on the Survey Settings page, the survey participant would mistakenly not be redirected to the defined URL after completing the survey. (Ticket #203316)

## Version 13.4.8

### CHANGES IN THIS VERSION:

- **Major security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way on any page that outputs user-defined text, such as field labels, survey instructions, etc. This bug allows anyone to inject the "script" tag on any page that outputs user-defined text. In addition, the HTML "s" strikethrough tag can no longer be used as an allowed HTML tag, but instead it is preferred that users use the HTML "strike" tag as an equivalent replacement if users are hand-coding HTML on a page. This excludes the usage of the strikethrough button in the rich text editor, which is unaffected by this issue. This bug does not affect any LTS versions. Bug emerged in REDCap 13.4.3 Standard.
- **Major bug fix:** The Simultaneous User Check, which ensures that two users cannot modify the same record/event/form/instance on the same project was mistakenly not working and would never display the warning to prevent users from being on the same instrument at the same time for a given record. Bug emerged in REDCap 13.2.0 (Standard). LTS is not affected by this bug.
- Change/improvement: HTML "strike" strikethrough tags are now allowed in user-defined text, such as field labels, survey instructions, etc.
- Bug fix: Several missing LOINC codes were added to the CDIS mapping features.
- Bug fix: A CDIS-related database query could throw a fatal error when computing information for a DataMart revision.
- Bug fix: When using MyCap, records might not appear in the MyCap Participant List if they were created while the MyCap feature was disabled in the project, after which MyCap was later enabled. (Ticket #202374)
- Bug fix: The "Auto-fill Form" link for administrators to use on forms and surveys would mistakenly insert the wrong value for specific field validations, such as Number (1 decimal place), Number (comma as decimal), and other number types. (Ticket #202401)
- Bug fix: When loading the first page of a multi-page public survey, in which no records exist in the project yet, the survey page might display a "REDCap crashed" error when running PHP 8. (Ticket #202648)

- Bug fix: When downloading a PDF of an instrument that contains a Descriptive Text field with an inline PDF attachment, in certain cases an extra empty page might appear in the resulting PDF right before where the inline PDF is rendered. (Ticket #202598)
- Bug fix: When using the Smart Variable [stats-table] and limiting its data via appending a unique report name, in which the report itself returns zero results, the stats table would mistakenly display statistics for all records in the project. (Ticket #201751)
- Bug fix: The warning popup that is displayed when a user attempts to download a data dictionary when one or more of the instruments in the project have been imported from the REDCap Shared Library, in which the user must first agree to the Shared Library's Terms of Use, was mistakenly not being displayed when users also perform the following other relevant actions: download an instrument zip file, download a Project XML file, or copy the project.

## Version 13.4.7

### CHANGES IN THIS VERSION:

- Change/improvement: Some performance improvements and minor changes for the Unicode Transformation page, such as the exclusion of specific database table columns since they do not need to be transformed.
- Bug fix: If the REDCap database table structure has utf8mb4 collation while REDCap's database connection is configured to use utf8[mb3], both the db\_character\_set and db\_collation values in the redcap\_config database table will be modified to ensure that the character set is aligned. This fix will occur during the upgrade process and will also be added to the Unicode Transformation page.
- Change/improvement: When a cron job crashes and sends an email to the REDCap administrator, the email now includes a full stack trace of the error.
- Bug fix: When piping a field variable that has an [X-event-name] Smart Variable prepended to it while also having an [X-instance] Smart Variable appended to it, it might mistakenly return a blank value rather than piping the correct value. (Ticket #142932)
- Bug fix: When a @CALCTEXT field contains an if() function that has a plus sign ( ) inside of single quotes or double quotes, the resulting text would mistakenly have the text "\*1 1\*" replacing every plus sign. This would occur when viewing a @CALCTEXT field on a data entry form or survey but not via server-side calculation methods, such as Data Quality rule H. (Ticket #141653)
- Change: Improved memory management for several CDIS-related processes, especially those performed by the cron job.
- Bug fix: The modal dialog displayed when attaching a file via the rich text editor might not look correct because some CSS styles were mistakenly missing for certain elements in the dialog.
- Bug fix: Some users that are accessing a CDIS project might find that project pages might take a very long time to load. This only affects certain users on CDIS projects, but it is unknown which users might be affected by this.

- Bug fix: The tables that list the choices for multiple choice fields on the Codebook page were mistakenly missing some of their borders.
- Bug fix: If using Multi-Language Management, the MLM "Change Language" tooltip might not display the correct mouseover text due to issues with Bootstrap 5. Related, the position and spacing of the language selector on data entry forms was off also.
- Bug fix: If using Multi-Language Management, the @LANGUAGE-CURRENT-FORM action tag was working on (completed) surveys viewed on data entry pages, which should never have been the case.
- Bug fix: The new instance button for repeating instruments on the Record Home might mistakenly not be disabled when the form icon is disabled by Form Display Logic.

## Version 13.4.6

### CHANGES IN THIS VERSION:

- **Major bug fix:** Reverted the bug fix in [Ticket #142759](#), which sought to provide server-side checking to prevent @READONLY fields from having their data values modified through the client side (e.g. JavaScript). This has been reverted because there appear to be too many scenarios in which this server-side checking was blocking legitimate data entry and thus some data was not getting saved properly. Most of these scenarios occurred when using certain action tags together with @READONLY, as described in [Ticket #202226](#) (i.e., @CALCTEXT, @CALCDATE, @DEFAULT, @SETVALUE), but other scenarios, such as when performing survey pre-filling (via URL parameters or via POST requests) for @READONLY fields, could not easily be incorporated into the server-side checking. **Therefore, the server-side checking for @READONLY fields (added to REDCap 13.1.20 LTS and 13.4.4 Standard) has been removed/reverted because it was preventing legitimate data entry on forms and surveys in various scenarios.**

## Version 13.4.5

### CHANGES IN THIS VERSION:

- **Major bug fix:** Opening a data entry form when using PHP 8 would crash the page with a fatal PHP error on certain occasions. Bug emerged in the previous version.
- **Change:** When using the Unicode Transformation page, if a database table's row\_format is COMPACT, it will now add ROW\_FORMAT=DYNAMIC to the SQL transformation script so that this does not need to be done separately (can be time-consuming on its own).

## Version 13.4.4

### CHANGES IN THIS VERSION:

- Bug fix: If using MySQL 8 for the REDCap database, admins might see false positives for the database structure check in the Control Center, in which it might mistakenly say "Your Database



Structure is Incorrect” when it is actually correct. Bug emerged in the previous version. (Ticket #202144)

- Bug fix: Fields that have a @READONLY action tag could have their data value modified on a survey page or data entry form by manipulating the webpage via JavaScript or via the web browser's developer console. (Ticket #142759)
- Various CDIS-related fixes

## Version 13.4.3

### CHANGES IN THIS VERSION:

- **Major bug fix:** If a user calls the "Export Records" API method and explicitly provides the "fields" API parameter as a comma-delimited text string (instead of an array), the API might mistakenly export the data for all project fields, including data for fields for which the API user does not have data export rights. (Ticket #200812)
- **Improvement:** "Postal Code (UK)" was added as a new field validation. After upgrading, an administrator will need to enable it on the Field Validation Types page in the Control Center. (Ticket #201961)
- **Improvement/change:** If a participant returns to the first page of a multi-page survey (e.g., by clicking the Previous Page button or returning via their Return Code), the survey instructions can be viewed again by clicking the "View survey instructions" link at the top of page 1. In previous versions, the survey instructions could never be viewed again after the survey had been started (i.e., the first page had been submitted). (Ticket #201430)
- **Improvement:** When using the Google/Microsoft Authenticator option for two-factor authentication in REDCap, users will be able to enroll using their Google/Microsoft Authenticator app the very first time they log in to REDCap via 2FA, in which the enrollment QR code will be displayed there the first time they log in via 2FA. This allows institutions to utilize the Google/Microsoft Authenticator option for REDCap without necessarily having to offer the less secure Email option, which is often the fallback/default for when users initially log in via 2FA. In previous REDCap versions, users would have to use a 2FA option other than Google/Microsoft Authenticator the first time they logged in via 2FA. So this behavior change provides a more secure way to offer 2FA. (Ticket #141099)
- **Improvement/change:** The main Control Center page now displays a warning if REDCap recognizes that your web server and cron job are using different PHP.INI files, as this can sometimes cause undesired side effects.
- **Change/improvement:** HTML "s" strikethrough tags are now allowed in user-defined text, such as field labels, survey instructions, etc.
- **Bug fix:** When following the directions on the page "Updating your REDCap Database Tables to support full Unicode", the process might mistakenly fail due to certain MySQL/MariaDB errors occurring when attempting to convert certain characters to utf8mb4 via the UPDATE queries provided on the page. If you have attempted to use this page previously and had to stop due to

these errors, then after upgrading, we recommend you try it again using the new SQL provided on that page.

- Bug fix: Small fixes for the page "Updating your REDCap Database Tables to support full Unicode".
- Bug fix: The Configuration Check page had several checks that would mistakenly fail due to language strings not being escaped. This bug was introduced in the previous version. This issue was supposedly fixed in REDCap 13.4.2, but mistakenly it was not. (Ticket #201609)
- Bug fix: Custom Survey Queue Text might mistakenly have many unnecessary line breaks, thus causing the text to have large, empty gaps. (Ticket #201330)
- Bug fix: When user privileges are edited or when users are added to a project via the CSV file upload on the User Rights page, it would mistakenly not log the individual events of each user being edited or added, respectively. (Ticket #200514)
- Bug fix: When the survey expiration date is saved in YMD date format on the first save of the Survey Settings page, the date format is corrupted and not saved correctly. (Ticket #201743)
- Bug fix: If a participant is taking a multi-page public survey and uses their browser's Back button to go back to the first survey page, then then afterward continues forward again on the survey, it would mistakenly create a duplicate response/record in the project (Ticket #142376)
- Bug fix: Vertically-aligned checkboxes (and some other elements as well) might not display correctly (or might be invisible) on survey pages while using an RTL (right-to-left) translated language via Multi-Language Management. (Ticket #201476, #200785)
- Bug fix: When taking an adaptive or auto-scoring survey that was imported from the REDCap Shared Library while the Survey Queue is being utilized, the Survey Queue might mistakenly fail to be displayed at the end of the survey or (if using auto-start) the next survey in the queue would fail to begin automatically. (Ticket #201816)
- Bug fix: When taking an adaptive or auto-scoring survey that was imported from the REDCap Shared Library while the Survey Queue is being utilized, clicking the Survey Queue icon at the top right of the survey page might mistakenly not display the Survey Queue.
- Bug fix: Floating matrix headers on data entry forms (but not on surveys) would mistakenly move too much to the right side of the page while floating.
- Bug fix: If an alert is set to be triggered during a data import, in which it will send an alert for each new repeating instance of a repeating instrument, the alert would mistakenly fail to get triggered if the imported value of the "redcap\_repeat\_instance" field is literally "new" rather than an integer. (Ticket #200445)
- Bug fix: If the record ID field has any kind of field validation, the validation would mistakenly fail to be enforced when renaming the record on the Record Home Page. (Ticket #200101)
- Bug fix: The "Save & Mark Survey as Complete" button on data entry forms might mistakenly be displayed in situations in which it should not. (Ticket #142863)
- Bug fix: The process that checks for errors in the REDCap database structure might have reported false positives if REDCap is running on newer MariaDB versions (10.3.37 , 10.4.27 ,

10.5.18 , 10.6.11 , 10.7.7 , 10.8.6 , 10.9.4 , 10.10.2 , 10.11.0 ), in which the “SHOW CREATE TABLE” query in these newer MariaDB versions excludes a column's charset and collation if the column matches the default charset/collation of the table.

- Bug fix: When creating a new project via the MyCap project template, the project creation process would mistakenly update the baseline date setting configuration before updating the project configuration, thus causing some things to be out of sync with regard to MyCap settings in the project in certain cases.
- Bug fix: When using an ontology service (e.g., BioPortal) on a Text field, the cron job that sends Alerts and Automated Survey Invitations might mistakenly crash with a fatal PHP error if the field's value is piped into the email body of the Alert or ASI. (Ticket #201928)
- Bug fix: The login page for "Shibboleth & Table-based" authentication might mistakenly display both the Shib and Table-based login options under the Shib login tab. Bug emerged in REDCap 13.4.0. (Ticket #200919)
- Bug fix: When uploading a CDISC ODM XML file of data on the Data Import Tool page, in certain situations while using PHP 8, the page could crash with a fatal PHP 8 error. (Ticket #200728)
- CDIS-related changes/improvements:
  - Created DTO (data transfer objects) for CDIS mapping to improve the code's reliability, readability, and maintainability.
  - Implemented the ability to include additional parameters in CDIS mapping using a specific syntax.
- CDIS-related bug fixes:
  - Resolved an issue where an error during FHIR authentication prevented the complete log from being displayed.
  - Fixed a bug where `fhir_identity_provider`, a CDIS setting, was not given proper priority during the FHIR authentication process.
  - Addressed a bug where the "next" page of a bundle containing too many entries could have no reference to the FHIR resource, resulting in a logging error.
- Bug fix: Some project-level pages would mistakenly appear too wide and would display a horizontal scrollbar when they should not. (Ticket #202024)
- Bug fix: When composing an invitation for a repeating survey on the Participant List page, the Compose Invitations dialog would mistakenly pre-check the checkbox of participants in the dialog's participant list in which the participant row represents a placeholder for a not-yet-existing repeating instance of the survey. In this case, users might not wish to send an invitation to these placeholders, but they exist there in the participant list just in case they do wish to invite them. So leaving them pre-checked when the Compose dialog opens could cause users to mistakenly send another repeating survey invitation to the participant when the user did not intend to do that.
- Bug fix: When two users are simultaneously on the same data entry form in a project about to create a new record, in which both users have been assigned the same tentative record name

prior to the record being created, if the second user to click Submit is also locking the instrument, the second user's record would skip a number in the record creation sequence (e.g., user 1 creates record "101" while user 2 creates "103" instead of "102") while also mistakenly not locking the second user's new record. (Ticket #201814)

- **Bug fix:** When a repeating instrument for a record has an instance 2 but not an instance 1 saved, the left-hand instrument menu might mistakenly display a gray status icon for the repeating instrument (as if no instances exist) when viewing other instruments within the record. (Ticket #202054)

## Version 13.4.2

### CHANGES IN THIS VERSION:

- **Major bug fix:** When appending "&new" to the end of a survey URL for a repeating survey, it would mistakenly not redirect to the next not-yet-created repeating instance of the survey but would instead display the message that the survey had been completed.
- **Bug fix:** When using Duo two-factor authentication, REDCap would mistakenly not honor when a user checked the checkbox to not prompt for the MFA login again for 7 days. (Ticket #201444)
- **Bug fix:** When clicking the Check All button on the Email Users page in the Control Center, if some text had been entered into the Search filter beforehand, every user would mistakenly be selected rather than just the visible users in the table. This could cause the email to go to all users instead of just specific ones.
- **Bug fix:** When the REDCap API has been disabled at the system level, the Tableau Export option on the "Other Export Options" page would mistakenly still appear. (Ticket #200248)
- **Bug fix:** When copying a project or creating a project from a template, the creator of the project would mistakenly not have "Alerts & Notifications" privileges. (Ticket #201585)
- ~~**Bug fix:** The Configuration Check page had several checks that would mistakenly fail due to language strings not being escaped. This bug was introduced in the previous version. (Ticket #201609)~~

## Version 13.4.1

### CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered on survey pages in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way into the survey URL in order to pre-fill a Text field on the page, in which the field must have the @DEFAULT action tag and must also be piped somewhere on the current page. (Ticket #201503)
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in the File Repository in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way inside the "comment" text of an uploaded file. (Ticket #200457)

- **Minor security improvement:** The "Clickjacking Prevention" feature is now always automatically enabled on the Password Recovery page (when using "Table-based" or "X & Table-based" authentication).
- **Improvement:** New option for Form Display Logic: "Hide forms that are disabled". When enabled, all forms that are disabled will also be hidden (not visible) on the Data Collection menu and on the Record Home Page.
- **Improvement:** The text for the setting "Require a 'reason' when making changes to existing records" is now available for translation on the Multi-Language Management page.
- **Improvement:** The Database Query Tool page in the Control Center now has a text box to easily filter database tables in the table list.
- **Bug fix:** The borders of table cells for tables created by the rich text editor might mistakenly be invisible when they have been set to be displayed with a border.
- **Bug fix:** The admin-only "auto-fill" button on surveys and data entry forms might not be located in the correct position on the page after resizing the webpage.
- **Bug fix:** The survey auto-continue feature might mistakenly not work with PROMIS computer adaptive test (CAT) surveys but instead would just display the text "Thank you for your interest, but you have already completed this survey". (Ticket #200757, #200621)
- **Bug fix:** Some matrix headers might mistakenly disappear when scrolling down on a survey or data entry form.
- **Bug fix:** Some dialog popups on MyCap-related setup pages might mistakenly close when clicking inside them.
- **Bug fix:** When using Multi-Language Management, the proper language would not get used for the e-Consent PDF in certain situations (Ticket #200944).
- **Bug fix:** When using Multi-Language Management, the survey acknowledgement page might not show the appropriate language.
- **Bug fix:** When using Multi-Language Management, the image upload and file attachment modals might not work on the MLM setup page.
- **Bug fix:** When a PDF file is attached to a Descriptive Text field and is set to display inline, it might not always get positioned in the correct place in the resulting PDF that is generated.
- **Bug fix:** When a PDF file is attached to a Descriptive Text field and is set to display inline, the inline PDF might be displayed with too low a resolution inside the resulting PDF that is generated. Its resolution has been increased from 120 DPI to 200 DPI to make it more readable. (Ticket #200582)
- **Bug fix:** When a PDF file is attached to a Descriptive Text field and is set to display inline, the inline PDF might mistakenly be too large for the page and might run off the page if more than one or two lines of text exist for the Descriptive Text field's field label. The resulting PDF that is generated will instead begin the inline PDF on a new page by itself in this scenario. (Ticket #200582b)

- Bug fix: The onhover action of the gear icons on the User Activity Log page in the Control Center would mistakenly not work and would not display the project title, as expected. (Ticket #200729)
- Bug fix: When clicking inside the "Preview message by record" dialog on the Alerts & Notifications page, the dialog would mistakenly close.
- Bug fix: In a classic/non-longitudinal project, when navigating directly to a data entry form prior to choosing a record (via the form list under "Hide data collection instruments" on the left-hand menu), the page would mistakenly be too narrow.
- Bug fix: Small tweaks and fixes for the page "Updating your REDCap Database Tables to support full Unicode".
- Bug fix: Piping in a survey's Survey Completion Text would always fail to work. (Ticket #200909)
- Bug fix: Floating matrix headers on survey pages and data entry forms might mistakenly move all the way to the left side of the page while floating.
- Bug fix: The footer (gray box) at the bottom of all project pages might mistakenly not appear in the correct position but might be too far left. (Ticket #200912)
- Bug fix: In some situations, a required field that is embedded inside another required field hidden by branching logic might mistakenly not be able to have its value removed when a user deletes the value and then clicks Save on a survey or data entry form. The value would reappear again if the page was reloaded.
- Change: Reworded the "Tip for min/max limits" text in the Online Designer for greater clarity.
- Bug fix: In some rare scenarios when a participant submits the first page of a public survey, the page might result in a "too many redirects" error, thus preventing the user from completing the survey. (Ticket #200351)
- Bug fix: When composing a survey invitation, in which the Smart Variable [survey-link:instrument] or [survey-url:instrument] is used (i.e., with an instrument name) inside the body of the invitation, the dialog titled "Invitation text is missing [survey-link] variable" would mistakenly appear when it should not. (Ticket #200914)
- Bug fix: When submitting the first page of a public survey, in which an MDY or DMY formatted date/datetime field was submitted, the survey might mistakenly display the "invalid values entered!" dialog saying that the field's submitted value was incorrect, which is not true.
- Bug fix: Several missing LOINC codes were added to the CDIS mapping features.
- Change: Hundreds of phrases and words of static text were abstracted in the REDCap code to allow them to be translated via the Language Updater. (Thanks to Hugo Potier for all his help with this task.)
- Bug fix: Fixed typo in Multi-Language Management logEvent() method. This does not seem to affect anything though.
- Bug fix: When embedding a matrix field and using the ":icons" notation, the balloon and history icons would mistakenly not be displayed for the embedded matrix field.

- Bug fix: If a horizontally-aligned checkbox is embedded inside the choice label of another checkbox that is vertically-aligned, the first checkbox of the embedded field might mistakenly not be visible. (Ticket #201393)

## Version 13.4.0

### CHANGES IN THIS VERSION:

- **New feature: Mosio SMS Services**
  - REDCap has the capability to send SMS text messages for surveys and for Alerts & Notifications by using a third-party web service named Mosio ([www.mosio.com](http://www.mosio.com)). In this way, users can invite a participant to take a survey by sending them an SMS message, in which the data would be collected in REDCap directly from their phone without having to use a webpage. There are two ways REDCap currently works with Mosio: 1) Surveys – Sending survey invitations and also sending questions and getting replies via text message, and 2) Alerts- Sending one-way Alerts & Notifications via text message.
  - The Mosio Two-Way Text Messaging (SMS) Services work exactly the same as the current Twilio functionality, with the exception of the Voice Call features. Mosio can only send and receive SMS messages. If a user wishes to switch a project from using Twilio to using Mosio, the only thing that needs to be done is for them to get a Mosio account and API key, then disable Twilio and enable Mosio in their REDCap project using their API key. That's all that needs to be done to migrate from Twilio.
  - If you wish to disable the Mosio functionality at the system-level so that users do not see the feature on the Project Setup page, an administrator may do so on the Modules/Services Configuration page in the Control Center (similar to the Twilio settings there).
  - For more information and to get a Mosio account, visit <https://www.mosio.com/redcap>. Mosio specializes in research communications automation, helping researchers improve engagement, adherence, and data collection in studies. The service is both HIPAA and 21 CFR Part 11 compliant and willing to sign BAAs.
- Change: The Internet Explorer web browser is no longer supported in REDCap.
- Change: The third-party package named Bootstrap that is embedded inside REDCap has been upgraded from Bootstrap 4 to Bootstrap 5. Most external modules should be unaffected by this change since most of the deprecated Bootstrap 4 classes and conventions have been backported into this version to make the transition as seamless as possible.
- **Major bug fix:** If the Automatic Upgrade (blue button on the Upgrade page), Easy Upgrade, and/or Auto-Fix options are available in your REDCap installation (regardless of whether you have actually used those options or not), it could be possible for someone that is not logged in to REDCap to directly access the upgrade page of an older version sitting on the web server (e.g., [https://.../redcap\\_v11.1.0/upgrade.php](https://.../redcap_v11.1.0/upgrade.php)) and click the blue Upgrade button for the Automatic Upgrade, which would mistakenly revert the system back to that version. Note: Doing

this would not run any other SQL but only the few queries that change the "redcap\_version" in the redcap\_config database table (and a couple of other minor things). If either the Automatic Upgrade or Easy Upgrade option is available on your system, then it is recommended that you additionally go and remove EVERY upgrade.php file that exists inside all previous REDCap version folders. This is just a one time thing, and is not necessary to do in the future. (Ticket #200338)

- Change: Replaced all hard-coded links to REDCap Community pages to point to the new REDCap Community website hosted on the Vanderbilt REDCap server. Previous links pointed to the old AnswerHub site.
- Change: The project PID was added to the email subject of all "Request to Move Project to Production" emails that are sent to REDCap administrators. (Ticket #76956)
- Bug fix/change: Inline PDF attachments on Description Text fields were mistakenly not being rendered as inline in PDF exports.
  - Last year when the inline PDF feature was added for attachments on Description Text fields, in which in previous REDCap versions only images could be displayed as an inline attachment on the web page and in the exported PDF file, the feature was mistakenly not fully implemented because the PDF attachment was not rendered inline inside the resulting exported PDF file for a form or survey. To fix this, any PDF attachments that are set to be displayed as inline on a Descriptive Text field will now correctly be rendered as inline in the PDF of the form/survey in order to be consistent with how inline images have always been treated in PDFs.
  - Additionally, the ImageMagick PHP extension is required for this fix to work. It is a common but not universal PHP extension. A new check has been added to the Configuration Check page to detect if this extension has been enabled on the REDCap web server, and if not, the page will provide a link with instructions for installing it, if desired.
  - NOTE: If administrators wish to disable this setting so that inline PDF attachments are not rendered as inline inside the PDF files, they may disable this functionality at the system level on the Modules/Services Configuration page in the Control Center.
- Bug fix: When the min or max validation range of a date- or number-formatted Text field contains certain Smart Variables, the min/max range check might mistakenly not work on a form or survey due to a JavaScript error. (Ticket #143298)
- Bug fix: When a user deletes all the data in a single event for a record (in the UI or via the API), the resulting logged event seen on the Logging page would mistakenly note that it happened to the first event instead of to the specified event.
- Bug fix: When the Record ID field has the @HIDDEN-PDF action tag, the field would mistakenly not get hidden in the downloaded PDF when clicking the PDF option "This data entry from with saved data (via browser's Save as PDF)" while on a data entry form. (Ticket #111718b)
- Bug fix: While the ability of individual projects to have their own authentication method was removed in REDCap 13.1.2, this setting was mistakenly not removed from the Edit Project



Settings page (in which changing its value on that page does nothing to affect anything). (Ticket #200379)

- Bug fix: When copying a MyCap-enabled project, it would mistakenly copy the MyCap tasks into the new project, even when the MyCap copy option is not checked.
- Bug fix: When migrating a project using the MyCap external module to begin using the native MyCap feature, the migration process might mistakenly not process certain MyCap tasks correctly that were not adequately enabled in the MyCap EM.
- Bug fix: The Smart Variables [survey-time-started], [survey-date-started], [survey-time-completed], [survey-date-completed], [survey-duration], [survey-duration-completed] might mistakenly return the value for record "1" in a project (if record "1" exists) when these Smart Variables are used in a calculated field, @CALCTEXT field, or branching logic on the first page of a public survey. These would, however, work correctly if used in a field label, choice label, etc., if used on a non-public survey, or if used on survey page 2 or higher of a public survey.

## Version 13.3.4

### CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered in the @CALCTEXT action tag in which a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript in a very specific way inside the text of the @CALCTEXT action tag.
- **Minor security fix:** An SQL Injection vulnerability was found on the Database Activity Monitor page, in which a malicious user could potentially exploit it by manipulating an HTTP request on another page while an administrator views the Database Activity Monitor page.
- Change: HTML "style" tags are now allowed in user-defined text, such as field labels, survey instructions, etc.
- Change/improvement: On the Calendar page, the year selection drop-down list now extends to 10 years in the future by default, and if the year is changed via the drop-down, the drop-down's option will extend to 10 years in the future of either the current year or the selected year (whichever is largest). (Ticket #143067)
- Bug fix: Several missing LOINC codes were added to the CDIS mapping features.
- Bug fix: When REDCap is sending a confirmation email to a survey participant after completing a survey, it might mistakenly cause a fatal PHP error on the page. (Ticket #143145)
- Bug fix: When piping a File Upload field with “:link” or “:inline” in the body of outgoing emails (e.g., alerts, ASIs), the piping would mistakenly not be successful under certain circumstances. (Ticket #143158)
- Bug fix: The Stats & Charts page might mistakenly crash in certain situations due to a fatal PHP error when using PHP 8. (Ticket #143019b)
- Bug fix: When using Multi-Language Management, in which an Automated Survey Invitation has been translated, the ASI might mistakenly not be sent in the desired language when there are conflicting things (or none) dictating what the language should be for the ASI. To prevent this

issue regarding language ambiguity in ASIs, a new MLM setting had to be added to allow users to define the language source of a given ASI at the survey level (but not at the survey-event level), in which users may choose the “Language preference field” or “User's or survey respondent's active language” as the ASI Language Source on the MLM setup page. (Ticket #143119)

- Bug fix: When using Multi-Language Management, in which an Automated Survey Invitation has been translated, the ASI might mistakenly be sent out in the fallback language in some cases. (Ticket #143119b)
- Bug fix: Any HTML tags used inside the equation of a @CALTEXT field would mistakenly not display correctly in the View Equation popup on data entry forms. (Ticket #143228)
- Bug fix: An issue specific to PHP 8.1 might cause some features of the Clinical Data Mart to crash with a fatal PHP error.
- Bug fix: When using comments in calculations or logic, if the comment contained a quote or apostrophe, it would mistakenly get included in the check to ensure that there is always an even number of quotes/apostrophes in the calculation/logic. This would sometimes throw an error and prevent users from being able to add or edit the calc/logic. (Ticket #143367)
- Bug fix: Large configurations for Multi-Language Management might mistakenly get truncated in the database when saved. The configuration columns in the MLM database tables were increased to handle this. (Ticket #143355)
- Bug fix: The embedded PDF on the e-Consent certification page of a survey with the e-Consent Framework enabled would mistakenly look squished (have incorrect dimensions) when taking the survey on an iPad. (Ticket #143212)
- Bug fix: In some cases after a participant has completed a survey, if they return to the survey using a private survey link (i.e., not a public survey link) while the survey has "Save & Return Later" disabled, the participant might mistakenly be allowed to modify the existing survey response. (Ticket #143400)

## Version 13.3.3

### CHANGES IN THIS VERSION:

- **Major bug fix:** On public surveys where the participant fails to enter a value for a required field on the first page of the survey, in which the survey page has dozens or hundreds of fields, the survey page might mistakenly crash with an HTTP 414 error (URL Too Long) after being submitted, thus preventing the participant from completing the survey. Bug emerged in REDCap 13.1.11 (LTS) and 13.3.0 (Standard). (Ticket #142829)
- Bug fix: The Azure AD (V1) authentication was mistakenly displaying “samAccountName” as an option to use for “AD attribute to use for REDCap username” when instead it should have been using “onPremisesSamAccountName”. (Ticket #134789)

- Bug fix: When re-evaluating an Automated Survey Invitation for a repeating survey that has been set up with a repeating ASI, the re-evaluation process might report that some invitations were scheduled when they were not.
- Bug fix: In some cases, images that were added via the rich text editor to a project dashboard, to custom text on a report, or to survey components (instructions, questions, etc.) would mistakenly not display on the public version of the dashboard, on a public report, or on the survey, respectively, unless the person viewing it was currently logged in as a REDCap user. (Ticket #142302)
- Bug fix: If Automated Survey Invitations have been set up for a survey, in which some invitations have already been scheduled for a record, if the survey instrument gets marked as "Complete" via normal save operations on the data entry form (with the exception of clicking the "Save & Mark Survey as Complete" button), the scheduled invitations would mistakenly get automatically deleted. They should only get deleted if the survey has been completed via the survey page or by a user clicking the "Save & Mark Survey as Complete" button on the data entry form. Bug emerged in REDCap 9.3.7. (Ticket #142989)
- Bug fix: When creating a Table-based authentication user or when adding a user to a project, if the username that was entered contained illegal characters, the error message would fail to note that the @ symbol is allowed in usernames. (Ticket #142999)
- Bug fix: The Stats & Charts page might mistakenly crash in certain situations due to a fatal PHP error when using PHP 8. (Ticket #143019)
- Bug fix: When using Duo two-factor authentication, if the system is set to "Offline", it would mistakenly prevent administrators from successfully logging in via Duo 2FA. (Ticket #143003)
- Bug fix: The admin detection on survey pages might mistakenly fail in certain situations and thus fail to display the "Auto-fill survey" link at the top-right of a survey page whenever an administrator is viewing the survey.
- Bug fix: When piping instance-related Smart Variables into the email text of a survey's Confirmation Email, the resulting piped text might mistakenly not be formed correctly. For example, appending [new-instance] to the [survey-link] Smart Variable, in which survey-link contains custom display text, would output the survey URL instead of the survey link with the custom text. (Ticket #143059)

## Version 13.3.2

### CHANGES IN THIS VERSION:

- Bug fix: When a record is correctly assigned to a Data Access Group, it might not appear to be assigned to its DAG while viewing the Record Status Dashboard, the Add/Edit Records page, and reports if data values for the record somehow got stored incorrectly in the backend redcap\_data table in multiple/mixed cases (e.g., "101a" vs "101A"). Un-assigning and then re-assigning the record back to its original DAG might fix this issue temporarily, but the bug would arise again whenever the project's internal "Record List Cache" was cleared/rebuilt. (Ticket #141329,

#142544) NOTE: If the issue still exists after the upgrade, click the "Clear the Record List Cache" button on the Project Setup->Other Functionality page.

- Bug fix: When exporting CSV files in various places throughout REDCap, the process might mistakenly fail for PHP 8 under specific unexpected conditions.
- Bug fix: The cron job used for the Clinical Data Mart or Clinical Data Pull might mistakenly fail due to the user ID being used instead of the username when creating a new instance of the job.
- Bug fix: Over 20 missing LOINC codes were added to the CDIS mapping features.
- Bug fix: The "resources" link in the MyCap informational dialog on the Project Setup page mistakenly pointed to the wrong URL. (Ticket #142514)
- Bug fix: The CSV file upload for importing Automated Survey Invitations (ASIs) in the Online Designer would mistakenly fail with an error if the user's preferred CSV delimiter was not set to "comma" via their user profile. (Ticket #142555)

## Version 13.3.1

### CHANGES IN THIS VERSION:

- Change/improvement: Added a new internal service check to the Configuration Check page that checks REDCap's ability to make server-side HTTP calls to its own survey end-point. For some server/network configurations, this kind of HTTP call was failing silently and causing some survey pages to timeout sporadically. This check will help administrators become aware of this issue if it exists.
- Bug fix: When performing certain actions in the File Repository, such as uploading files, an error message would mistakenly be displayed afterward saying that there is a DataTables warning. Bug emerged in REDCap 13.3.0 (Standard).
- Bug fix: When using the page "Updating your REDCap Database Tables to support full Unicode", some REDCap installations (depending on their specific database configuration) might experience a few minor SQL errors during the unicode transformation process.
- Bug fix: The "System Statistics" page in the Control Center did not display the label correctly for the count of projects utilizing the Clinical Data Pull feature.
- Bug fix: Data values imported for a patient's "birth-sex" via FHIR using the Clinical Data Operability Services might mistakenly get converted into an incorrect value ("UNK") in some specific cases. (Ticket #141976)
- Bug fix: If using the e-Consent Framework with the setting "Allow e-Consent responses to be edited by users?" enabled, users with edit privileges would mistakenly be prevented from modifying the data on the consent form via a data import. (Ticket #140846)
- Bug fix: The Survey Queue page might crash due to a fatal PHP error when using PHP 8. (Ticket #142125)
- Bug fix: When using the @RICHTEXT action tag on a Notes field, changing the text in the editor (i.e., the field's value) might mistakenly not trigger calculations or branching logic accordingly. (Ticket #142127)

- Bug fix: When using the rich text editor to translate a survey's survey instructions on the Multi-Language Management setup page, any images uploaded via the rich text editor would mistakenly not load when viewing the translations on a survey page (that is, unless the person viewing the survey is a REDCap user and is currently logged in to REDCap). (Ticket #141658b)
- Bug fix: If a user that has "read-only" user privileges for a specific instrument is viewing the Data History of a File Upload field on that instrument, the "Delete" link next to each file/revision would mistakenly be displayed in the Data History popup. Users with read-only instrument-level privileges should not be able to delete older revisions of a File Upload field. (Ticket #141709)
- Bug fix: If a repeating instrument has been enabled as a survey, but the survey setting "(Optional) Repeat the survey" has not been enabled on the Survey Settings page, then when viewing the participant list, a placeholder instance might mistakenly not be displayed in the participant list to represent a not-yet-taken instance of the repeating survey. There should always be at least one untaken placeholder instance displayed for each record in the participant list for repeating surveys because this allows users to open a new instance of the survey or email the participant a link to that new survey instance. (Ticket #141545)
- Bug fix: When creating/editing a report, the explanatory dialog for Step 3's "Show data for all events for each record returned" checkbox was outdated and mistakenly did not mention anything about the setting's usage in projects containing repeating instruments/events. (Ticket #141953)
- Bug fix: When the "Text-To-Speech" feature is enabled on a survey, the speaker buttons would mistakenly not appear next to the field labels of fields in a matrix, thus preventing participants from utilizing the feature there. (Ticket #141787)
- Bug fix: In very specific situations where a field is a required field and is embedded in another field, in which the container field is hidden by an @HIDDEN action tag while the field embedded inside it also has an @HIDDEN action tag, the user would mistakenly get prompted by the Required Field dialog for a hidden embedded field if the container and/or embedded fields have @HIDDEN-SURVEY while on a data entry form \*or\* if they have @HIDDEN-FORM while on a survey page. (Ticket #142212)
- Bug fix: If a whole record has been locked or if a data entry form has been locked for a given record, any survey participant who happened to have opened their survey prior to the record/instrument being locked would mistakenly still be able to submit and save their survey response, and as a result, possibly overwrite any existing data on the locked record/form. (Ticket #139555)
- Bug fix: When downloading a data dictionary or an instrument zip file, any Dynamic Query (SQL) fields that contain "\\n" in their SQL query would mistakenly have the text "\\n" replaced with "|" in the resulting downloaded file. (Ticket #141734)

## Version 13.3.0 (released on 2023-02-02)

### CHANGES IN THIS VERSION:

- **New feature:** Administrators will now see an “Auto-Fill Form” or “Auto-Fill Survey” button at the top right of forms and surveys, respectively. Clicking the button will auto-fill all visible fields on the entire instrument. This is to help with testing or troubleshooting data collection.
- **New feature:** Embedding file attachments in text & emails
  - Users may now attach one or more files into the text of a survey invitation, an alert, or a field label on a form/survey, among other things, by clicking the file attachment (paperclip) icon in the rich text editor and then by uploading a file from their local device.
  - This feature is available for every rich text editor \*with the exception\* of non-project pages (e.g., the Email Users page) and also any field with the @RICHTEXT action tag.
  - If administrators wish to disable the ability to embed attachments in text via the rich text editor, they may disable this functionality at the system level on the Modules/Services Configuration page in the Control Center. Note: This setting operates independently from the other setting “File Repository: Users are able to share files via public links” (found on the File Upload Settings page in the Control Center); thus, even if public file sharing has been disabled globally, users can still upload file attachments via the rich text editor so long as its associated setting has been enabled globally.
  - Note: All files uploaded via the rich text editor will be represented in the text of the editor as a public file-sharing link, which allows the file to be downloaded in any context (e.g., on surveys, on authenticated REDCap pages, and in public areas like emails and public dashboards). This means that if anyone has possession of this link, they will be able to download the file (at least, until the file has been deleted). All files uploaded via the rich text editor will be automatically stored in a special “Miscellaneous File Attachments” folder in the File Repository where they can be accessed and/or deleted, if necessary. If any such file is deleted from the “Miscellaneous File Attachments” folder in the File Repository, the associated download link for the file will cease to be active and thus will become a dead link wherever it has been used.
- **Improvement:** A new "preformatted code block" button was added to the toolbar of all rich text editors.
- **New feature:** New one-way messaging system for Clinical Data Interoperability Services (CDIS) that is designed to provide secure communication to users who are utilizing asynchronous CDIS processes, such as background data pulling via a cron job. This new system has been developed to address the need for a secure means of communication outside of REDCap Messenger, particularly for messages that contain protected health information (PHI). Emails were not a viable option for these types of messages, as they do not provide the necessary level of security to protect PHI from unauthorized access. The system utilizes encryption techniques to ensure the confidentiality and integrity of all messages exchanged.
- Bug fix: When using comment lines inside the Field Annotation for a @CALCTEXT field, Data Quality rule H would mistakenly not perform the calculation successfully. (Ticket #141558)
- Various updates and fixes for the External Module Framework.

- Bug fix: Fixed PHP 8 related error when an administrator tries to hide the blue Easy Upgrade box in the Control Center. (Ticket #141539)
- Bug fix: When using "now" as the min/max for a date field or using "today" as the min/max for a datetime field, the validation range check would mistakenly not detect an out-of-range value. (Ticket #141646)
- Bug fix: When using the rich text editor to translate a label on the Multi-Language Management setup page, the image icon was mistakenly missing from the editor's toolbar interface, thus preventing users from uploading alternative images into the translated text.
- Bug fix: When using the rich text editor to translate a label on the Multi-Language Management setup page, any images uploaded via the rich text editor would mistakenly not load when viewing the translations on a survey page (that is, unless the person viewing the survey is a REDCap user and is currently logged in to REDCap). (Ticket #141658)
- Bug fix: When a survey participant enters data on a public survey, in which some required fields are left blank, it is possible for the participant to re-submit the page in the browser (via the browser Back/Reload button) and thus cause duplicate records to be created. This can especially happen for certain browsers, such as Mobile Safari on iOS devices, when minimizing the browser and then re-opening the browser later. (Ticket #141012)

## Version 13.2.5

### CHANGES IN THIS VERSION:

- **Improvement:** Comment lines can be added to calculations and logic to serve as annotations to explain various parts of the logic/calc. Thanks to Günther Rezniczek for helping add this new feature.
- **Improvement:** When setting up the Survey Queue or an individual Automated Survey Invitation, the survey drop-down for the “When the following survey is completed” setting in the dialog now has a built-in search feature to easily find a specific survey in a long list. Additionally, if the survey title does not match the instrument title, the drop-down list will also display the user-facing form name for the survey, which should help users find the right survey quicker in certain cases.
- Bug fix: In some cases, images that were added via the rich text editor to a project dashboard would mistakenly not display on the public version of the dashboard unless the person viewing it was currently logged in as a REDCap user.
- Updates for the External Module Framework, including: 1) Added arguments allowing `$module->getProjectsWithModuleEnabled()` to return projects in analysis/cleanup status and with completed dates, and 2) Miscellaneous scan script updates and unit test updates.
- Bug fix: When creating a project using the MyCap project template included in REDCap, in some cases the resulting project might result in errors when a participant loads the project on their MyCap mobile app.

- Bug fix: A fatal PHP error might occur for PHP 8 on a project using the Clinical Data Pull feature, in which a user clicks the "Delete data for THIS FORM only" button at the bottom of a data entry form. (Ticket #141230)
- Bug fix: When using Clinical Data Pull and launching the CDP REDCap page embedded inside of Epic Hyperspace (this does not affect other EHRs but only Epic), the embedded page would not function correctly due to incompatibilities with Internet Explorer, which is the embedded browser utilized by Hyperspace. This bug emerged in the previous REDCap version.
- Bug fix: When exporting a project's data to SAS, in which the project is using Missing Data Codes and also the exported data set contains Text or Notes fields, the resulting SAS syntax file might mistakenly be missing an underscore at the end of the variable name for the "format" attribute for the Text and Notes fields. (Ticket #103142)
- Bug fix: The replacement function `utf8_encode_rc()` for PHP's `utf8_encode()` might prevent certain users from logging in successfully, in which this ultimately is caused by certain unknown web server configurations. (Ticket #140393)
- Bug fix: When using the Randomization page while a project is in production status, a REDCap administrator is unintentionally able to erase the randomization model of the project, which should only be allowed while in development status (even for admins). The "Erase randomization model" button will now stay disabled for everyone when a project is in production. (Ticket #141286)
- Bug fix: If a required field's field label contains a lot of HTML, in which the field value is left empty when submitting a survey page or data entry form, the "Some fields are required" dialog that is displayed would mistakenly not look correctly on some occasions due to the HTML in the label. To prevent this issue and to make the field label more readable, the required field dialog will now strip all HTML from the field label when displaying it. (Ticket #141262)
- Bug fix: Bug fix: When MyCap is enabled in a project, on some rare occasions when migrating a project using the MyCap external module, the process might fail due to an SQL error. (Ticket #138168b)
- Bug fix: Importing data for a patient's race via Clinical Data Interoperability Services (CDIS) might mistakenly fail in cases where the patient has more than one race listed in the EHR.
- Bug fix: When a user is viewing the field drop-down for the Data Search feature on the Add/Edit Records page in a project that has more than 20K records, the note text in the first option of the field drop-down would mistakenly be truncated, thus preventing the user from being able to read it. (Ticket #141317)
- Bug fix: When uploading a CSV file of user privileges on the User Rights page, the "lock\_records" privilege would mistakenly return an error if its value is set to "2", which is a valid value. (Ticket #141141)
- Bug fix: When changing an existing alert from sending "immediately" and "every time" to sending not immediately (e.g., "Send on next X at time Y") without explicitly clicking the "Just



once" radio option in Step 2B after doing so, these changes made to Step 2 would mistakenly not get saved when saving the alert. (Ticket #140491)

## Version 13.2.4

### CHANGES IN THIS VERSION:

- **Improvement:** When using the built-in MyCap feature, users can now explicitly define the title of the project as seen by participants in the MyCap Mobile App. A new button has been added near the top of the "MyCap App Design" to allow users to set the project title that is displayed in the app. If not defined, it will default to using the user-facing title of the REDCap project, which was how it behaved in previous versions of REDCap.
- **Major bug fix:** In certain situations where survey invitations get scheduled for a repeating Automated Survey Invitation, in which the record's data is later modified, the repeating invitations that were scheduled might mistakenly get unscheduled. (Ticket #140851)
- **Major bug fix:** If a user is creating a new record on a data entry form, in which record auto-numbering is enabled in the project and the form is submitted by the user with a required field that has no value, if the project's internal Record List Cache (a secondary list of records in the database for improving performance) had not been built yet or was recently cleared (which is done automatically by REDCap internally), the user submitting the form might trigger the Record List Cache building process, which might inadvertently create multiple identical records instead of just creating the one record.
- **Bug fix:** If a checkbox field has a large amount of choices, thus causing the checkbox options to become a scrollable box, the overall height of the scrollable box would mistakenly be too short on surveys that have the "Enhanced radio buttons and checkboxes" feature enabled. Since the enhanced radios/checkboxes are much larger than regular radios/checkboxes, the scrollable area has been made twice as tall in these cases in order to provide a less confusing user experience to survey participants.
- **Bug fix:** The Multi-Language Management page in the Control Center might incorrectly denote a translated language as being 100% complete when it is only 99.9% complete. (Ticket #140724)
- **Bug fix:** Various issues related to checkbox fields with many options, such as displaying a horizontally-aligned checkbox field as too wide in Firefox. Also, the new feature added in the previous version that would cause a long list of checkbox options to become scrollable has now been completely removed since so many users complained about it being problematic for them. (Ticket #140759)
- **Bug fix:** When piping a Notes field that has the @RICHTEXT action tag, the HTML formatting in the field's value might mistakenly not render correctly on the page, especially if the value contains HTML tables. (Ticket #140910)
- **Bug fix:** When a datetime field is using "now" as the min or max validation range, and the user clicks the "Now" button next to the field after having been on the page for more than one minute, the "out of range" popup would mistakenly display.

- Bug fix: When using Multi-Language Management, if some slider fields do not have their slider label values translated, it could cause some parts of the survey page or data entry form not to display all its translated text successfully. (Ticket #140871)
- Bug fix: Some LH-aligned radio buttons might mistakenly cause the page to be too wide if a radio choice label is very long. Unfortunately, the only way to fix this issue fully is to revert a change in the previous version that improved the text wrapping of the choice labels of horizontally-aligned checkbox fields.
- Bug fix: If a survey participant clicks the "Save & Return Later" button on a survey, which has no survey title (i.e., it was left blank), the email sent to the participant might be slightly confusing because it displays only two double quotes where the survey title should be. It now displays slightly different text if the survey title has not been defined.
- Bug fix: If a project title contains some UTF-8 encoded characters, the project title would mistakenly display as garbled when viewing it on the My Projects page on a mobile device. (Ticket #140814)
- Bug fix: If a repeating Automated Survey Invitation has reminders enabled, the Survey Invitation Log might mistakenly display a bell icon and number (representing a reminder) next to a recurring invitation that is not actually a reminder.
- Bug fix: When using the Randomization page and downloading an example allocation table in Step 2, for certain randomization models, the CSV file produced may become too large to be processed, which might throw an error, and/or it might take an abnormally large amount of time to output the CSV file. To prevent these situations, the example allocation tables now will only output a maximum of 50,000 rows regardless of the randomization model set up in the project. (Ticket #140909)

## Version 13.2.3

### CHANGES IN THIS VERSION:

- Bug fix: If a Project Template has Form Display Logic, new projects created from that Project Template would mistakenly not have the Form Display Logic settings copied over. (Ticket #140489)
- Bug fix: If REDCap is using an external file storage method (e.g., AWS S3, Azure Blob Storage) for storing all files in the system, the Project Revision History's version comparison feature would mistakenly fail, and it would result in a fatal PHP error when using PHP 8. (Ticket #140551)
- Bug fix: If a participant email address contains one or more capital letters and is added manually to the Participant List multiple times, the Participant List would mistakenly fail to display a number and parentheses immediately before the email address on each row (e.g., "1) [rob@aaa.com](mailto:rob@aaa.com)") to help differentiate the multiple instances of the same email address. (Ticket #140466)
- Bug fix: When using Duo two-factor authentication, some important debugging information would mistakenly not get output to the page when an error occurred, in which it prevented

admins from effectively troubleshooting certain network-based configuration issues that could cause Duo not to work dependably for users.

- Bug fix: If a checkbox field has a large amount of choices, it could cause the field to mistakenly take up a disproportionate amount of the survey page or data entry form, thus resulting in a bad user experience. In this case now, the whole list of checkbox options will instead become scrollable so that the checkbox field does not become too unwieldy while still allowing the user to see all the choices.
- Bug fix: Checkbox fields that are horizontally-aligned might mistakenly have a choice's checkbox and its label appear on two different lines due to text wrapping. Instead, an individual choice's checkbox and label now no longer wrap to the next line but instead stay together on the same line. (Note: This fix does not apply when viewing a form/survey on a mobile device.)
- Bug fix: In very specific situations where a field is a required field and is embedded in another field, in which the container field is hidden by an @HIDDEN action tag while the field embedded inside it does not have an @HIDDEN action tag but does have a @DEFAULT action tag, the default value added to the embedded field via the @DEFAULT action tag would mistakenly not get saved when saving the page.
- Bug fix: Various fixes related to issues with using Duo two-factor authentication, including issues caused by the use of a proxy with the REDCap web server. (Ticket #140186, #137099)
- Bug fix: Clicking the "View Equation" link for a @CALCTEXT field on a data entry form or survey page while the project is in production status but not in draft mode would mistakenly display an error message instead of displaying the calculation. (Ticket #140645)
- Bug fix: When downloading a CSV file of either users or user roles on the User Rights page, the form-level viewing rights and form-level export rights in the CSV file might mistakenly contain instruments that have been deleted from the project. (Ticket #140668)
- Bug fix: If PDF files had been stored in the File Repository's "PDF Survey Archive" folder, after which the Auto-Archiver and/or e-Consent Framework had been disabled for all surveys in the project, the "PDF Survey Archive" folder would mistakenly no longer be visible in the File Repository, thus preventing users from accessing previously-saved files. That folder will now be displayed if the Auto-Archiver and/or e-Consent Framework is enabled or if any files already exist in the folder. (Ticket #140435)

## Version 13.2.2

### CHANGES IN THIS VERSION:

- Bug fix: In certain situations in which REDCap or an External Module executes a specific parameterized query to the database, the query might mistakenly fail due to an "illegal mix of collations".
- Bug fix: Unless using the latest version of the REDCap Mobile App, a @CALCTEXT field might mistakenly not function correctly in the Mobile App if its calculation contains multiple nested IF() statements.

- Bug fix: When a participant is viewing their survey queue, if they click the "Get link to my survey queue" button and then click "Send" to email the survey queue link to themselves, the Email Logging page would mistakenly not associate the email with a record in a project when searching for emails on that page. This can make it very difficult to find this email via the Email Logging page. In the future, this action will associate the email with a specific record on the Email Logging page.
- Bug fix: A SQL query might mistakenly not get formatted correctly and thus might fail when CDIS is sending a notification to a user via REDCap Messenger regarding the completion of an asynchronous CDIS task.
- Bug fix: The "How do I format the equation?" link in the "Edit Field" dialog in the Online Designer would mistakenly open the wrong question on the "Help & FAQ" page.
- Bug fix: If a user assigned to a Data Access Group views a report that has DAG filtering imposed via "Step 3: Additional Filters" in the report settings, in which the user's DAG is not one of the selected DAGs of the Additional Filters, the report might mistakenly display some records from the user's DAG when instead it should not return any records in the report. A similar behavior might also occur for a user that is not assigned to a DAG when viewing the same report, but instead occurring when using the DAG Live Filter to select a DAG that is not one of the selected DAGs of the Additional Filters. (Ticket #140302)

## Version 13.2.1

### CHANGES IN THIS VERSION:

- **Major bug fix:** If using AAF authentication or any of the "X & Table-based" authentication methods (excluding "LDAP & Table-based"), the login process might not function correctly and might appear as if the authentication has mistakenly reverted to only "Table-based" authentication. Bug emerged in REDCap 13.2.0 (Standard). (Ticket #140065)
- Bug fix: Certain Font Awesome icons might mistakenly not display correctly on survey pages.

## Version 13.2.0

### CHANGES IN THIS VERSION:

- **New feature: "Azure AD & Table-based" authentication method-** The "Security & Authentication" page contains a section of custom settings for using the Azure AD authentication method in REDCap. All the existing Azure AD settings apply to this new authentication method, with the addition of a new custom button text for the "Azure AD" button on the login page.
- **Important change:** New option displayed on the Configuration Check page to update the REDCap database tables to **support full Unicode**. REDCap installations that were initially installed using a version prior to REDCap 8.5.0 will have an older, legacy type of database collation/encoding and charset (character set). If your REDCap installation is affected, it is *highly* recommended that you follow the steps detailed on the page that is linked on the Configuration Check page in order

to update your database. Please note that this is NOT an urgent issue, but it is something we recommend you address sooner rather than later since your current database collation and charset (UTF8 or UTFMB3) have been deprecated in the latest versions of MySQL/MariaDB and thus will eventually be removed altogether in future versions of MySQL/MariaDB. The full process of updating your database tables may take many minutes or possibly hours to run all the pertinent SQL to convert both the table structure and table data. Please follow the instructions on that page carefully, and make sure you perform a database backup before starting the process. (Thanks to Tony Jin for his help with this effort.)

- **Important change:** Dropped support for PHP 7.2. Only PHP 7.3.0 and higher are now supported in REDCap.
- Bug fix: The user privilege for "Alert & Notifications" was mistakenly not getting copied for project users when using the "Copy Project" feature while electing to copy the current users into the new project. (Ticket #140023)
- Bug fix: The Cron Jobs page in the Control Center might crash with a fatal PHP error for certain versions of PHP if the "exec" function is disabled in PHP as a "dangerous" function on the REDCap web server. (Ticket #140034)